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ORIGINAL COMMUNICATIONS.

ON THE PHYSICAL EXAMINATION OF THE ABDOMEN, IN HEALTH AND DISEASE.

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(Continued from page 97 of last Number.)

EXAMINATION OF THE ABDOMEN BY PALPATION.

[The following introduction to the subject of "Palpation" was inadvertently omitted at the commencement of the paper in the number for February.

LIKE the sight, the touch acquaints us with the form, size, and movements of objects; but it further instructs us with regard to their temperature, surface-feel, consistence, resistance, and weight; and in the case of soft, pliable, and yielding objects, such as the abdomen, the touch reaches beyond the surface, and may feel more or less of all the same properties in the deeper-seated parts. Thus by *palpation*, or *handling*, of the abdomen, we may learn far more than sight can teach us, of the physical properties, and therefore of the healthy or morbid condition, of its internal organs; and the more carefully we analyze these physical properties, and understand their relations to the parts which possess them, the more instructive will be the knowledge which we derive from them.

As to the sight, so also to the touch, the abdomen is made up of its walls and the viscera within them; and the latter being felt through the medium of the former, will be more or less distinct, according to the condition of the abdominal walls. When these are very thick or tense, it may be difficult to feel anything through them: when they are thin, and more especially when they are also flaccid, the condition of the contained parts may be determined with great nicety. The thickness of the walls depends chiefly on the quantity of fat, and where this is very great, palpation can only afford obscure results; the touch must be applied with considerable pressure, to reach beyond this superficial mass. The tension of the walls depends on the tonic contraction

of the abdominal muscles, often increased by voluntary restraint, under the apprehension of pain, or from nervousness; and it may greatly interfere with the examination by rendering the walls too hard to permit anything to be felt through them: but this muscular rigidity may generally be reduced by calming the patient's fears, and by diverting the attention from the region by questions on some other interesting topic regarding the health, whilst the hand is kept applied with a gentle pressure, and softly rubbed over the surface of the abdomen, until the muscles become relaxed, and the examination is properly effected.]

The palpable signs of *air in the peritoneum* are very characteristic. The usual moderately elastic softness of the abdomen is replaced by a tympanitic elasticity, remarkable for its resilient feel, and even on superficial pressure yielding the same light and springy resistance. Effused as air usually is suddenly in consequence of perforation of the alimentary canal, its phenomena may be much masked by the intense pain and other symptoms of severe disturbance which usually accompany that accident, and which, by spasmodic contraction of the abdominal muscles, render palpation difficult. In the absence of such symptoms, which are in themselves pretty significant, the physical diagnosis is easy, as in the following case.

A woman, 50 years of age, was admitted under my care for disease of the abdomen, which I considered malignant. The liver was much enlarged, with nodulated inequalities, and was an object of palpation at every visit. One day, before asking a question, or hearing the daily report, one touch of the epigastrium drew from me the exclamation—"Here's air in the peritoneum!" The region which before had presented the hard uneven resistance of the diseased liver, now felt soft, very elastic, and uniform on its very surface; like, in fact, a thin vulcanized India-rubber air-cushion moderately distended. The peculiarity of the feel, contrasted with the previous condition of the abdomen, made me sure that nothing but an extravasation of air could account for the change; and on further examination, the superficial tympanic sound, with metallic echo on percussion, and the gurgling near the surface at the sides, where liquid mixed with the air, confirmed the first impression. The patient had suffered more than usual pain, but was now easy, and her countenance calm, under an opiate; the pulse was, however, very rapid and thready, and the feet and legs becoming cold. She died in about twelve hours. The air was found in the peritoneum as indicated, occupying the whole front of the abdomen; the liver was large, and studded with cancerous tubera: lying underneath, and attached to it, was a cancerous mass involving the pylorus, duodenum, and transverse colon. The perforation was in the duodenum.

As peritoneal tympany, or pneumo-peritoneum, occurs only in case of perforation of the alimentary canal, its palpable signs as just described, and those of superficial tympanic stroke-sound with metallic tinkling, to be noticed hereafter, become evidences of the occurrence of that mortal accident. But perforation may occur without the extravasation of sufficient air to produce the signs; their absence, therefore, will not disprove the existence of perforation. In the formation

of limited fistulæ in the peritoneum and walls of the abdomen communicating with the intestines, the superficial gurgling or croaking under the pressure of the fingers is a very palpable sign; I have met with it in more than one case. It is more distinct and superficial than the gurgling of reducible herniæ.

PALPABLE SIGNS OF SOLID INDURATIONS AND ENLARGEMENTS.
IN THE ABDOMEN.

Solid bodies of flattened shape are sometimes met with in the walls of the abdomen, underneath the integuments, or between the abdominal muscles and peritoneum. In the former situation, they can be felt to move freely on the muscles, even when these are tightened. When attached to the abdominal peritoneum, they may be felt to remain fixed during the movements of respiration, which would carry them a little upwards and downwards, were they connected with the abdominal viscera. In making observations on these movements, the umbilicus, linea alba, or some other conspicuous object on the walls, will assist the eye or the hand in seeing and feeling what is attached to the walls, and what moves with the viscera underneath. Indurated patches in the situations now alluded to, I have known both of a cacoplastic or low exudatory, and of a malignant kind; the latter being commonly distinguished by its penetrating through several textures, and often presenting nodular irregularities.

Laminar indurations of the omentum, or intestinal peritoneum, may be felt by careful palpation when the walls are relaxed, practised both perpendicularly, and from side to side. Gentle perpendicular pressure detects the greater resistance offered by the induration, as compared with adjoining spots; but delicate lateral palpation may even detect the edges of the induration, and determine its thickness, as well as its superficial character. The absence of resistance on firm pressure, and of dulness on percussion, distinguishes these superficial indurations from more solid tumours.

A thickened state of the coats of the intestines is of much commoner occurrence than is generally supposed; and in most instances of chronic diarrhœa it can be detected by careful palpation in the region of the cæcum, or of the ascending or the sigmoid colon. For this examination the patient should be in bed, lying flat on the back, with the muscles quite relaxed; the abdomen is then to be felt by gentle steady pressure with the flat fingers, gradually slid to successive parts; the greater superficial resistance, in one or more of the regions just mentioned, will then become very obvious; and it is sometimes, but not always, accompanied by tenderness on deeper pressure in the same spot. Although feeling thus hard to superficial pressure, it yields with some resistance to firmer pressure, and gives a tympanitic sound on percussion. This thickening of the large intestine apparently results from a low inflammation of a chronic or subacute kind, and is usually attended by occasional attacks of diarrhœa, or even slight dysentery, sometimes alternated with constipation. A married lady, æt. 30, had for more than twelve months been liable to attacks of severe diarrhœa, which greatly reduced the flesh and strength; the catamenia became irregular and defective; and the whole constitutional powers were failing. Travelling on the continent had been

tried with temporary benefit; but the attacks continued to recur; and the bowels being confined in the intervals, and the appetite bad, no progress was made towards recovery. In this case I found distinct fulness, with superficial resistance, from the right iliac to the hypochondriac region; and an irregular but moveable resistance was also felt in the left iliac fossa. All this tract was tender on pressure, even when diarrhœa was absent. Counter-irritation over the course of the colon, first by a blister, and subsequently by solution of iodine, using, at the same time, an India-rubber belt, lined with soft wool, succeeded in removing the thickening of the bowel. After a month's treatment, there was no return of diarrhœa, and the health has been uniformly good ever since, a period of five years. In another case, that of a married lady, æt. about 36, severe abdominal irritation, with dysenteric diarrhœa, was brought on by too frequently bathing in the sea. The symptoms were repeatedly relieved by astringents, farinaceous diet, and confinement to bed; but they always recurred so soon as she attempted to get up and return to the usual diet. Being summoned to Ramsgate to see her, I found, on examination of the abdomen, a very palpable hardness and fulness along the whole tract of the colon, from the cæcum to the sigmoid flexure inclusive; and it was only after repeated blistering, and counter-irritation with iodine over these parts, whilst the bowels were regulated by small doses of sulphate of copper and narcotic extracts, with occasional mild alterative aperients, that a permanent cure was effected. In many cases of chronic diarrhœa and dysentery I have detected the same physical signs of thickening of the large intestine, and have by them been guided to the same successful mode of treatment.

In these cases the thickening of the intestine is probably the result of a low inflammation, sometimes excited by the injudicious administration of astringents to stop a diarrhœa. The thickened bowel has an irritable mucous membrane, whilst the regular and efficient contraction of its muscular coat is impeded by the deposit, which consists partly of thickened epithelium, and partly of exudatory matter under the mucous membrane. Hence, too, the combination, or alternation of irritative diarrhœa with costiveness and retention of scybala. Practitioners are apt to regard the scybala as the true cause of the irritation and diarrhœa; and doubtless they may contribute to keep it up: but their repeated formation and retention are really due to the altered structure and impeded function of the intestine, and are to be prevented only when its motory and secreting powers are properly restored.

In feeling for these intestinal thickenings, some variation of manipulation is necessary in different parts of the abdomen. The cæcum is usually quite superficial, often forming a fulness or prominence in the right iliac region, and extending more or less towards the linea alba and upwards. Its thickening is detected by gentle pressure meeting with more resistance and hardness than is felt in the hypogastric or left iliac regions, whilst the sound on percussion is still hollow, although often less so than usual. The ascending and transverse parts of the colon usually lie deeper; and, if within reach, require more pressure to test their resistance; which, if increased, is to be distinguished from that of an enlarged liver by being more rounded, and with a hollow stroke-sound. The sigmoid flexure of the colon

lies still deeper in the left iliac fossa; and, if thickened, is to be felt from the left side, by the flat fingers gradually pressed with a rotating motion and increasing firmness; it is usually contracted, contains little or no air, and feels like a large curved cord, in some degree moveable, in the hollow of the ilium.

The thickening of the intestine, hitherto described, is supposed to be of inflammatory origin; but it may save repetition to mention here, that *malignant disease* may grow in the same situations, present somewhat of the same signs, and be detected by similar manipulation. The diagnosis of malignant formations may generally be established, both by reference to the constitutional symptoms, and by peculiarities in the local disease. On the former we need not dwell at present. The peculiarities of malignant growths, as distinguished from inflammatory deposits, consist in their assuming more the form of circumscribed tumours; both from their being developed in more nodular masses, and from their disposition to penetrate and amass together contiguous tissues and organs, and further to involve them in their ulterior processes of irritation, contraction, ulceration, etc. Even diffused malignant growths on the intestines may therefore generally be distinguished from simple inflammatory thickening by their greater irregularity of surface, being more nodulated and circumscribed, and often connected with a deeper-seated tumour, which affords much more than the superficial resistance of thickened intestines.¹

Malignant disease of the stomach, when affecting the pyloric end, and often involving a portion of the duodenum, colon, and pancreas, in most cases forms a palpable tumour, to be felt on pressing more or less deeply to the right of the epigastrium. Much tact and tenderness are often required to enable the hand to reach deep enough to feel the tumour; and a favourable opportunity should be taken when the bowels are empty, and when there is the least amount of sickness or tendency to pain. The pressure should be rotatory and gradual, in the direction of the spine. The tumour, when felt, is rarely quite dull on percussion, and often pulsates, from the motion of the subjacent aorta; but the pulse is in one direction only, and not diastolic, or enlarging at each beat, as in the case of aneurism. The tumour is easily distinguished from the liver by its being deeper seated; or if it be larger and approach the surface, by the tympanitic interval between it and the mass of the liver, the signs of which belong to the

¹ The following case is uncommon, but I mention it as both exceptional, and yet illustrative of the importance of physical examination. An unmarried lady, aged 26, who had always been delicate, came under my care for gastritic dyspepsia, which resisted all the usual measures. Intolerance of all nutritious food, and consequent wasting, ensued, and subsequently obstinate constipation and great distention of the intestines. An eminent physician who was called into consultation, considered the case hysterical, and advised the persevering use of galbanum and colocynth purges, aided by the rue enema. I did not concur in that opinion; because by careful palpation I had distinctly felt a thickening of a portion of the intestines. I supposed this thickening to be the result of chronic inflammation, and apprehended ulceration and perforation should the obstruction continue. Perforation and speedy death did ensue; and examination discovered very extensive thickening of both stomach and ileum; but the thickening was from malignant disease, which in so young a person I did not anticipate. The ileo-cæcal valve was almost closed by stricture, and the intestine above was ulcerated and perforated.

lower right ribs, and upper part of the epigastrium. Scirrhus of the cardiac end of the stomach is less within the reach of palpation, as this portion lies both deeper and more under the ribs. I cannot now call to my recollection a case in which I have been able to feel the tumour where it was confined to this end of the stomach. On the other hand, I can scarcely remember one case of malignant disease in other parts of the stomach and intestines, where, sooner or later, a tumour or induration has not been felt, so as to serve to confirm a diagnosis, which is often too evident from the general symptoms.

When malignant disease causes obstruction of the intestines, those portions above the impediment may become enormously distended, and their outline may often be traced by palpation, as in cases of fæculent accumulation; but this tends to put out of reach the obstructing lesion, which is buried in the accumulated mass. If the stricture be in the rectum or sigmoid flexure, its presence may sometimes be inferred by the obstacle opposed to a finger, to a bougie, or to the contents of an enema introduced by the rectum.

Solid massive tumours in the abdomen, as those of a much enlarged liver or spleen, present certain palpable characters in common, which should be noticed before we advert to the individual varieties. In proportion to the mass which is in contact with the walls of the abdomen, an enlarged liver or spleen will present the resistance and weight of a solid body, soft or hard, as the case may be. When soft, it may not feel much more resisting and inelastic than the abdomen in general, especially if felt only in points with the ends of the fingers; but if pressed more in mass with the flat of the fingers, and more particularly if the weight of the tumour be brought to bear against them by a leaning forward or prone posture, the feel of the solid enlargement, although soft, becomes quite palpable, and may be contrasted with that of other parts of the abdomen containing intestines only. Again, a slight abrupt impulse given to one point of a soft solid may cause a kind of undulatory movement through it, which might be mistaken for fluctuation; but besides its wanting the soft and gravitating character of liquid motion, a distinction may be made by giving the body a flat push on one side, which will be communicated to the hand on the opposite side with the impulse peculiar to a solid body. In fact, by a little management, we may generally contrive so to handle and feel the tumour, as to infer from its consistence, resistance, weight, and shape, the nature of its material.

The test is easier when the tumour is harder and more dense, because then its greater resistance and weight are more obvious, and so strikingly contrast with those of the abdomen in general, that it is easy to feel the outline of the mass, and trace its precise shape and position. Its continuity, likewise, from front to back, or from side to side, can be determined by finding that a push or impulse is transferred by it, which it would not be, if fluid or air intervened.

In many such cases the weight of this tumour causes some variation in its position with change of posture; and we may avail ourselves of this to ascertain its form and dimensions, and its relation to the other contents of the abdomen. This is especially needful in the common combination of solid tumours with liquid effusion; the liquid, if

abundant, putting the tumour out of reach, until, by its greater weight, it is brought to bear down against the walls.

The *liver* may enlarge in any or in every direction, upwards, downwards, and outwards, in front, at the side, and behind. Except when upwards only, a very rare case, the enlargement may be detected by palpation, as well as by percussion and inspection. The outward bulge is more obvious to sight than to touch; but if at all considerable, it may readily be felt on passing the hand from above downwards, from the middle regions of the chest to the upper parts of the abdomen, making a comparison of the right with the left sides. The bulge of liver enlarged laterally then meets the hand in a way that can hardly escape notice, and if found to be dull on percussion, and resisting pressure, it may fairly be diagnosticated as such in cases where no opportunity is given for inspection. The most common mode of enlargement, however, is downwards, with more or less general fulness; and as this brings the organ below the margin of the ribs under the pliant walls of the abdomen, it becomes the especial object of examination by palpation. The amount and kind of enlargement will determine the degree of facility in detecting it. If the liver do not extend beyond an inch or so below the ribs, it may not be felt at all; for it must be remembered that its margin being thin, it may oppose to the fingers no palpable resistance, especially if the walls of the abdomen are at all thick. But if the organ reaches two or three inches below, even without any material thickening or increased density, the fingers can scarcely fail to feel its resistance, particularly when aided by comparing the pliancy of the abdomen in the left hypochondrium. When the liver is still more enlarged, its margin usually becomes thickened as well; and besides the very distinct resistance which its anterior surface offers to the fingers, the lower margin may now be felt as a distinct ridge by the fingers pressed into the abdomen below it, and then moved rather briskly upwards. For the examination of the liver, the sitting, standing, or leaning forward posture, answers best; the observer placing himself either in front, at the side, or behind, according as he can best apply his hands to the abdomen.

It is in the case of induration with enlargement, that disease of the liver is most obvious to palpation. There is then no need of comparison with other parts of the abdomen; the hard substance of the organ forming a tangible object, the surface, outline, and irregularities of which may be independently explored in all their details. In such cases we can often determine with great nicety whether the substance is granular or uniform; whether the edge retains its wedge-shape, or has become thick and rounded by deposit and the contractile process. We may often feel the under surface of the organ, and trace its inequalities, with the position and state of the gall-bladder.¹ Nor are these

¹ The following case is not less interesting in its diagnostic than in its pathological and therapeutic relations.

A dignitary of the Church, of sedentary habits, had for years been subject to attacks of severe pain in the hypochondria, attended with obstructed flow of bile, and generally followed by more or less jaundice. For some time these attacks were considered and treated as arising from gall-stones; but they had latterly become so frequent and severe, and the strength and flesh had been so much reduced, that great fears were entertained that there was malignant disease pre-

nice points of diagnosis matters of pathological or speculative interest only. They have a direct bearing on the prognosis of the case, and are by no means useless in guiding the treatment. The soft enlargements of the liver are in many instances tractable under remedial measures, especially those which increase and liquefy the secretion of the organ; and the transition to the state of induration is not so abrupt or universal as to preclude similar means from being highly useful, even where considerable hardening of the tissue has taken place; the salutary effect being generally attended by a palpable diminution of the hardness, as well as by a reduction of the dropsy, jaundice, and other consequences of the obstruction. In these more tractable cases of indurated liver, we do not feel the rugged surface and granular irregularities which are present in the more formidable kinds of cirrhosis; nor do we find the proofs of failure of function and degeneration of structures in the general symptoms—such as progressively failing appetite and strength; increasing jaundice and dropsy, although bile is excreted, and urine is not greatly deficient; gasping breathlessness, or orthopnoea; fluttering or rapid pulse; with the ominous arcus senilis, etc.—indications of the worst kind, which leave no hope of real recovery.

The alteration in the shape of the edge of the liver, from wedge-shaped to rounded, often occasions a displacement of the organ from its natural position, which it is important to notice in reference to its physical signs. So long as the liver retains its proper shape, its anterior surface remains in close contact with the abdominal walls, unless a liquid effusion happens to separate them, which is clearly evinced by the sign of *diahydric*¹ succussion before described. But when the lower margin becomes rounded, portions of intestines are apt to slip up between the walls and the liver, and to separate its lower

sent. On my first seeing him, he was much emaciated; the liver did not reach below the margin of the ribs, and there was no feeling of any tumour or hardness underneath. One spot, just below the right ribs, two inches from the ensiform cartilage, was pointed out as being always tender, and the seat of the most intense pain during the attacks; then, I was assured, it became the seat of a hard swelling. On one occasion only I felt this swelling; it was then soft and of a rounded shape, but the attack was on the decline. This seemed to me so much like a distended gall-bladder, and the whole case so like one of biliary concretion, that I caused a diligent search to be made in the evacuations. In a few days a gall-stone was found, consisting as usual of cholesterin. The diagnosis being thus clearly made out, and the usual means of treatment having failed, it occurred to me that the cod-liver oil, which I was then giving extensively to phthisical and cachectic patients, might prove a means of dissolving the concrete biliary matter, and of promoting a better secretion in the liver. It was given, and answered perfectly; only one slight attack happening after its use; appetite, flesh, and strength, were gradually restored, and the gentleman has been constantly engaged in his ecclesiastical duties for nearly three years. But what is worthy of remark is, that under this treatment the liver enlarged in size, so as to reach nearly two inches below the margin of the ribs, and the tender spot descended with it, and in the single slight attack which did occur, it formed a palpable fulness just two inches below its former position. In a few weeks the tenderness was removed. This gentleman consulted me for a slight ailment this day (Feb. 3). I found the liver still reaching between one and two inches below the margin of the ribs, but quite free from all tenderness or swelling.

¹ I propose this term (from *dia*, through, and *hudōr*, water,) to express the characteristic sign of *striking through liquid*, noticed in this paper on the Palpable Signs of Liquid.

part more or less from them. The liver thus becomes partially enveloped in intestines, and can no longer be felt distinctly. The gurgling of the intervening bowel may often be felt on pressure; and the prone position may cause the weight of the liver to compress it for a time, but it is not easy to displace the intestine when the shape of the liver is thus altered; and it is necessary to be aware of the fact, or we may consider the liver to be much smaller than it really is.

It is not necessary to dwell on the varieties of extent and form of enlargement of the liver determinable by palpation; but there is one which is so peculiarly diagnosticated by it as to deserve mention. I allude to dimpled cancerous tubera in the liver. The shape of these tumours, rounded, flattened, and umbilicated, or with central depression, is so characteristic, and they so frequently rise from the anterior surface of the enlarged organ, that in as many as five or six cases I have been able to feel them through the walls during life, and announce their existence, and the consequently unfavourable prognosis. Two of these cases, modelled in wax, are preserved in the museum at University College.

The *spleen*, when only moderately enlarged, lies deeper than the liver, and with the stomach in front of it; therefore, in feeling for it, below the margin of the left ribs, we must use deeper palpation, aiming the fingers obliquely upwards and to the left, instead of the superficial direct perpendicular pressure practised in testing the right hypochondrium for the liver. Its peculiarity of shape also is equally apparent; for so soon as it is sufficiently enlarged to come within the reach of the fingers, it offers to them the resistance of a rounded and somewhat moveable body, meeting the fingers and slipping aside under their pressure. With a further amount of enlargement, the spleen reaches lower under the ribs and nearer to the surface; and it then becomes more easily palpable, both from its more accessible position, and from its bulk and weight opposing a more decided resistance to the fingers. In its greatest degrees of hypertrophy, the spleen extends more or less down the whole left side of the abdomen, approaching the umbilicus in front, and reaching nearly or quite to the left ilium. When thus greatly enlarged, it is in contact with the walls of the abdomen under the whole margin of the left ribs from the spine to the epigastrium, or near it; it occupies the whole lumbar, hypochondriac, and iliac regions of the left side, and may in parts extend even across the mesial line. To all these regions it gives the peculiar resistance of a heavy solid body; compact, and transmitting a flat, heavy impulse, or push, through its mass; but not often hard; usually smooth and even on all surfaces but that which forms its right boundary, on which rounded prominences and intervening indentations can be felt. These correspond with the internal margin or pelvis of the spleen, into which it receives its vessels. To the right lie the intestines, which, by their elastic feel and hollow sound, contrast well with the dead heavy mass occupying the left of the abdomen, and sometimes causing considerable enlargement of its whole bulk.

These physical characters are in most instances quite sufficient to identify an enlarged spleen; but they are further to be confirmed by the results of percussion, and by the general symptoms of pallid cachexia, which commonly accompany great enlargements of the

spleen. I must not omit to mention that the spleen, not being firmly sustained in its position like the liver or kidneys, may somewhat change its position according to the posture; and this, although it may prove an additional means of diagnosis, has sometimes been a source of error. In common with all the medical men who examined the case, I once mistook a much enlarged spleen for an ovarian tumour. It occupied the lower half of the abdomen; its upper margin reaching from the right iliac obliquely to the left lumbar region; and the rounded prominences of the upper surface were supposed to be cysts of an ovarian tumour. They proved to be the protuberances of the vascular or inner surface of the spleen, which had fallen completely out of its place, so that this surface now lay uppermost, whilst that which usually occupies the side rested on the pelvis.

The kidneys, from their deep position in the abdomen, might seem to be beyond the reach of palpation; but, except in cases of considerable thickness of the walls of the abdomen, or of their distension by the bulky contents of the intestines, or by effusion in the peritoneum, a little contrivance and tact will generally enable the hand to feel these glands sufficiently to detect any material enlargement, as well as to test their degree of sensibility. For this purpose it is necessary to displace the superjacent intestines; and this is to be accomplished by rotatory pressure, gradually, but steadily increased, until the hand sinks so deep in the abdomen as to feel its posterior walls. The kidneys occupy the most prominent part of these, on either side of the spine, beneath the lowest bend of the ribs in front, a little above the line of the umbilicus, and from two to four inches to the right or left of it. For making this examination, the patient should lie flat on the back, with the limbs straight, but the muscles all as much relaxed as possible. The observer should be on the side opposite to that of the kidney that he is going to examine; and he should change sides to feel for the other. The right hand is then to be applied below the ribs, the fingers pressed flatly with a rotatory movement towards the kidneys; the steadiness of the pressure being maintained, if necessary, by the left hand applied on the right. The right fingers then, in their rotatory pressure, glance over the interior lumbar region; and the lower half of each kidney may usually be felt as only a slight flattened convexity in their natural state; but, when enlarged, forming a palpable prominence of rounded form, and often painful on pressure, the pain being sometimes referred to the loin, and the course of the ureter, as well as to the site of the kidney itself. In effecting this examination, it is often necessary to take off the patient's attention by conversation, to prevent those muscular efforts in the chest and abdomen, which are excited by nervousness or dread of pain, and which greatly interfere with the success of the exploration. Hence very timid or sensitive persons can rarely be examined satisfactorily in this way. The left kidney is more easily reached than the right, on account of the greater resistance opposed to deep palpation on the right side by the liver. The right, however, lies a little lower in the abdomen; and this brings it, in part, from under the last ribs in the right lumbar region, which is a spot in which both the fulness and tenderness of an enlarged right kidney may often be detected.

The diagnosis of moderate enlargement, with tenderness of the

kidney, through deep palpation, is of great importance in relation to practical measures. Often, guided by it, have I succeeded in curing acute albuminuria, and in relieving that of a chronic character, by means of cupping, blisters to the loins, and hydragogue purgatives; and in many instances the reduction of the swelling of the kidney, with the entire disappearance of albumen and of granular cell-casts of the tubuli from the urine, and the restoration of the proper amount of excrementitious matter, has proved that the disease was merely congestive, or subinflammatory, and the cure has been permanent. In other instances the tenderness has subsided, but not the enlargement; and the urine, although improved, has given proofs of a remaining structural disease, in its never recovering a healthy standard in quantity, specific gravity, and freedom from albumen.

Very bulky enlargements of the kidneys are more readily detected by palpation, both in front and in the lumbar region; and their position, shape, and immobility, pretty well serve to distinguish them from other tumours. Cysts in the kidney, and the expansion of the gland by the purulent fluid of chronic pyelitis (formerly mistaken for abscess), may be felt as a rounded, soft, heavy, fluctuating tumour, in the lumbar and iliac regions. Malignant disease of the kidney is usually attended with considerable enlargement, which, from its irregular form, and from the amount of blood commonly present in the urine, in conjunction with the general history and other symptoms, will generally serve for the diagnosis.

In several instances, I have detected, by deep palpation, *enlargement and thickening of a ureter*, commonly in connexion with chronic pyelitis. It is felt as a hard cord-like body, deep in the iliac region, more or less moveable, and transmitting the pulsation of the iliac artery at the point at which it crosses it. The enlarged ureter is tender on pressure, and the pain shoots upwards to the loin, and downwards to the testicle of the same side.

Enlargement and induration of the mesenteric glands may be supposed to be a fit object for diagnosis by palpation, and by careful manipulation it may generally be detected; but not so readily as might be anticipated; for with it there often coexists so much tympanitic distension of the abdomen, as to prevent the hand from reaching the deeper parts. But by choosing times when the bowels have been well cleared, and by using firm flat palpation, with some rotatory movement, followed by an increased pressure towards the back, the nodular glandular tumours may often be discovered.

Further illustrations of the utility of palpation might be given in cases of solid ovarian and uterine tumours, of pregnancy, of psoas abscess, of malignant disease of the bladder, of pelvic abscess, etc., etc.; but this part of the subject has already exceeded my intended limits; and quite enough has been given to illustrate the principles of manual examination of the abdomen. In my next communication, the acoustic signs of the abdomen will be considered.

(To be continued.)

CASES OF LABOUR, COMPLICATED WITH ULCERATING CANCER OF THE WOMB: WITH REMARKS.

By HENRY OLDHAM, M.D., Obstetric Physician to, and Lecturer on Midwifery, etc., at Guy's Hospital.

CASE I. ULCERATING CARCINOMA OF CERVIX UTERI DURING PREGNANCY—BREECH PRESENTATION—RUPTURE OF UTERUS. On the 17th of June 1847, Mrs. H., a poor woman, with a pale and anxious face, called at my house for advice. She was 33 years of age; had been married eight years, and was the mother of four children, whom she had carried well, and given birth to without difficulty or accident. She had suckled the last child for fourteen months; and, before weaning it, had again become pregnant, and was now seven months advanced in gestation.

The principal symptom of which she complained, was a frequent coloured discharge, which first came on a month after she was pregnant, and had continued, with but short intermissions, to the present time. It was now brought on by any exertion, or by straining to relieve the bowels. Four days since she had had an attack of bleeding, which came on like a menstrual period, the discharge being of a vivid red colour. It lasted in this way for two days, and was succeeded by a profuse watery discharge of a faint, but not very offensive smell. She was restless at night, feeble and low-spirited in doing the work of her family in the day, and she occasionally had a burning pain at the lower part of the abdomen and back; but the degree of pain which she suffered was far less than is usual with the same disease in the unimpregnated state. The child moved freely.

On making an examination, I found the cervix the seat of malignant disease, which had already destroyed a considerable portion of both lips of the os uteri, leaving a circular hole large enough to admit the tips of two fingers, with which the presenting part of the child could be felt through the membranes. The tissue of the cervix, around the os uteri, was thick, hard, and uneven; and a hardened, well-defined bar of solid matter could be felt on the anterior segment of the womb. The appreciable limit of the disease in this direction seemed to correspond to the os uteri internum. The finger could not reach sufficiently far posteriorly to ascertain the extent of tissue which had there become implicated; but, as far as could be felt, it was unusually hard and rigid. The examination caused some bleeding.

Mr. Wells, a gentleman in practice in the neighbourhood, from motives of humanity, and from interest in the case, undertook to attend her in her confinement. In consultation with him, it was agreed that she should be allowed to go on her full time, and that the manner of delivery should be determined by existing circumstances. She was to live as well as she was able, and to take some tonic medicine, and an opiate occasionally at night.

On the 31st July, I was requested to see Mrs. H——, who was reported to have been in labour for some hours: but, on visiting her, I found her to be suffering from an aggravated degree of false pains, mixed with much pain that was connected with her disease. On ex-

amination, I found that the disease had made progress in the cervix, which was lower in the pelvis, and more open. The extent of surface which was affected seemed considerable, including the whole interior of the canal of the cervix, which felt of a stony hardness, and broken up into a rough, deeply rutted, bleeding tissue. Having stretched my finger through this seemingly lengthened passage, I could feel the presenting part of the fœtus, which appeared to me to be the breech. An opiate was given, which produced some hours' rest, and much refreshed the patient.

On the night of the 3rd of August, Mr. Wells sent me word that Mrs. H. was in labour, and that the breech presented. On seeing her, I found that, under the influence of regular pains, the cervix had yielded somewhat, the os uteri being more open, and more dilatable; and the breech of the child was easily felt. The front wall of the cervix, however, was indurated, thick, and unyielding, like a mass of hardened mortar. The bladder was distended with urine, which was drawn off, to the amount of a pint and a half, with the catheter. She had vomited occasionally since labour had set in: her pulse was rapid and feeble; and her countenance had the sharp, pallid, anxious look so characteristic of an advanced cancer. The dilatation of the os uteri was not sufficiently advanced to allow of any interference, and I agreed to meet Mr. Wells again in a few hours; during which time he watched for any opportunity which might offer to help delivery.

At 7 A.M., on August 4th, I received a note from Mr. Wells, telling me that the poor woman had suddenly become collapsed, and was dying. Before I could reach her house, she had been dead about twenty minutes. Since I saw her, labour had gone on, with some effect on the dilatation of the os; but she had been vomiting, and had then become deathly faint, and moribund.

POST-MORTEM EXAMINATION. This was made on the same night, the weather being extremely hot. We found that already some marks of decomposition were visible on the body. On opening the abdomen, some bloody fluid, composed of liquor amnii and blood, ran out. The uterus was distended with gas; and on drawing it forward, the fœtus (a full-grown male) was found projecting half through a longitudinal rent, about five inches in length, in its back wall, beginning at the cervix and extending upwards on the body. The fœtus, uterus, and adjacent abdominal viscera, were all in a state of incipient putrefaction. The uterus and its appendages were removed, and taken to Guy's Hospital. The placenta, from the rapid progress of decomposition, separated from the uterus. The abdominal viscera were very cursorily examined, as the room was dimly lighted, and we were mainly intent on getting away the uterus; but, as far as we ascertained, they were free from disease.

The size of the uterus, and thickness of its walls, were natural. The whole inner surface of the cervix was thinned by malignant disease; and the structure was deeply furrowed and hard. The upper boundary of the disease, marking the inner opening of the cervix, was very clearly defined by an edge of healthy tissue belonging to the internal part of the body of the uterus, which was altogether free from malignant disease. The vagina also was healthy. On the posterior surface of the uterus, on the left side, was a small superficial

patch of malignant deposit; and, spreading from it to the ovary and tube of the same side, were numerous bands of false membranes. The right ovary, too, had been enveloped in a web of false membranes. There was a corpus luteum in the left ovary.

CASE II. CARCINOMA OF CERVIX UTERI—PREGNANCY—DELIVERY BY CRANIOTOMY. In 1848, a poor woman, nearly 40 years of age, became an out-patient, under my care, at Guy's Hospital, for hard cancer of the cervix uteri, with occasional hæmorrhage, and a constant fœtid watery discharge. She had had syphilis some years before, and had lived a hard and destitute life. Her general health improved under the influence of tonic medicines, with some astringent and sedative wash to the uterus. I then lost sight of her.

About a year from this time, on May 7, 1849, Mr. Leadam, of Tooley Street, sent me word that this patient was in labour; and finding a great obstacle to delivery, and thinking that I should be interested in the case, he asked me to see her. I found that she had been in strong labour for some hours, and was getting weak and exhausted, but that the os uteri was prevented from dilatation by a mass of ulcerating cancer in the cervix, from whence a fœtid discharge was oozing away, which had inflamed and excoriated the external organs. At the time, I thought that the malignant disease had not gone on so rapidly during her pregnancy as I should have expected; but the extent of the cervix-tissue which had become infiltrated was considerable, and offered a formidable obstacle to delivery. The head was presenting, and could be felt through the disc of the os uteri, which, during labour, had become dilated to the size of a crown-piece.

To deliver her as soon as possible was imperative. I perforated the head, and freely emptied its contents; and, under the influence of uterine action, the bones collapsed well. I fixed the crotchet firmly on the inside of the presenting parietal bone, rather posteriorly; and being able to make powerful traction in this direction (which was the best for the head to pass in small compass) I had the satisfaction of finding it clear the hard narrow passage of the cervix with but little laceration of its structure. The remainder of the child was removed without difficulty. The placenta was strongly adherent, and was obliged to be peeled off with the hand.

I have since been informed by Mr. Leadam, that the woman lived about a month. On inspection after death, the cervix was found to be the seat of malignant ulceration; and on the posterior wall of the vagina, close to the cervix, were some ulcerated patches which had perforated the walls of the vagina, and communicated with the pelvic peritoneum. Peritonitis, of a low form, had supervened, and there was some purulent effusion in the peritoneum. There was a small cyst, of the size of a chestnut, in the right ovary.

CASE III. CANCER OF THE UTERUS AND VAGINA—DEATH OF FÆTUS IN UTERO—EASY BIRTH—PERFORATION OF VAGINA. I saw Mrs. P——, a poor woman, 42 years of age, on the 26th July 1850. She had been married twenty-three years, and had had twelve children. She had been confined six weeks. When one month gone in her last pregnancy, she began to have watery discharges with bleeding, and suffered severe pain in the loins, hips, and legs, so that

sometimes she could neither sit down nor move about. Sexual coitus brought on bleeding, and was forbidden. She suffered much from constipation. When these symptoms first appeared, she sought advice from an experienced medical man, who told her that she had cancer of the womb; but, at different times during her pregnancy, assured her she was not pregnant, although her own confidence in the fact of her pregnancy remained unshaken. She was suddenly seized with labour pains on June 9th, 1850, after she had gone her full time, according to her reckoning, and was easily delivered of a dead male child. The placenta was expelled without difficulty; but both the child and the secundines were putrid. Since this time, she had been getting worse; the discharges of blood and foetid watery discharge had been mixed with fæculent matter. She was cachectic, and greatly exhausted, and a constant sufferer from cancer pains.

On examination, the cervix uteri, and the posterior wall of the vagina, were found extensively destroyed by ulcerating carcinoma; and there was an opening into the rectum, through which the fæces passed. The disease was in an advanced stage; and her feeble constitutional power seemed unlikely to hold out long against the exhaustion produced by it.

REMARKS. The preceding cases are instances of an extremely rare complication of pregnancy and labour, and one which, when viewed in relation to delivery, is of practical importance. They were all three cases of carcinoma of the cervix in a state of ulceration, and not of the fungoid or softer form of malignant disease. Neither are they to be associated with what has been termed the scirrhus os uteri in an early stage, by which is meant, either entirely or partially, a hard, somewhat large, and nodulated cervix, but without ulceration. This morbid condition, so common in the unimpregnated state as the result of chronic inflammation, may also exist in pregnancy, although it usually becomes softened as gestation advances, by the accumulation of the mucous secretion of the glands of the cervix, and the large supply of blood, and offers but little impediment to labour. Cases of this kind have been classed as cases of cancer with pregnancy, but without any conclusive proof of their being really cancerous. Here and there, as very rare exceptions, such cases may retain their induration and indisposition to dilate during labour. There is a preparation in the Museum at Guy's Hospital, where a large flap of the lower segment of the uterus was separated after a long first stage of labour; but there is nothing in the swollen and indurated cervix to indicate malignant deposit. I doubt very much whether any one, who has so thoroughly investigated the subject as to know when he has failed as well as when he has been right, would have any confidence, from a physical examination of the cervix, in pronouncing a disease to be carcinoma before it had begun to break down. Directly this process begins, it may be detected by a kind of brittleness of the edge of the os, or inner surface of the cervix, on a hard base, which is very characteristic of the commencing work of destruction. But there is nothing in the touch of the antecedent "scirrhus" to distinguish a benign and curable from a cancerous and incurable induration.

In Case III, the posterior wall of the vagina was implicated in the

disease; but in the other two it was confined to the cervix, converting this part of the uterus, towards the end of pregnancy, into a rugged indurated channel, involving a large amount of structure, and offering a solid unyielding obstacle to the progress of uterine dilatation.

The possibility of impregnation occurring in cases of incipient, or even open cancer of the cervix, notwithstanding the bleeding and watery discharge, is authenticated by several recorded cases,¹ and confirmed by the present instances. And however improbable such a concurrence may be, yet it is an important point in practice to give due weight to any signs or suspicion of pregnancy, to note them, and to carefully investigate them, with the view of deciding this question. In the third case, in spite of the woman's own assurance of being pregnant, this precaution was omitted. In the number of cases of cancer of the neck of the womb which come before me, especially in hospital practice, I have been struck with the comparative frequency of sexual intercourse between husband and wife, when it would be thought that the fœtid discharge and bleeding would have secured its voluntary suspension. The effect of the discharges on the glans penis in these cases, with but rare exceptions, is not irritating; and the possibility of pregnancy, during the child-bearing age, independently of the injury to the woman when the cancer is ulcerating, ought to warn the practitioner to take care that sexual connexion be forbidden.

When pregnancy is known to be present, and the fact of a pre-existing cancer has not been ascertained, it is possible that the signs of the development of the disease may be confounded with some of the morbid states of pregnancy; and palliative measures may be alone prescribed. In the first case, no vaginal examination had been made before the woman applied to me at the seventh month, although she had been previously under medical care, and no suspicion of so serious a disease had been entertained. It is always desirable to examine the uterus *per vaginam*, and to ascertain the condition of the cervix, if bleeding comes on frequently during pregnancy, although it may not amount to a profuse flow at any time; especially if it be brought on after walking, or straining, or during the sexual act, and if it be followed by a watery, or thin purulent discharge, with a more or less fœtid odour. Symptoms like these would warrant a strong suspicion of malignant disease; but, until the parts are examined, no certainty can be arrived at. It has happened to me to entertain this suspicion, when the case has turned out to be one of a few warts within the labia, whose fœtid secretion has, from neglect of cleanliness, collected about the parts; and the occasional small bleedings have come from a neglected ulceration of the cervix, whose vascularity has increased with pregnancy. A more common case is met with, especially in hospital practice, which, in its symptoms in connexion with early pregnancy, more closely resembles cancer. I mean induration of the cervix, with a granular suppurating surface within its channel, the result of chronic syphilis. This may, or may not be associated with thickening of the cellular tissue of the labia and œdematous effusion, with fissures and excoriations about the external organs. When pregnancy occurs under these circumstances, there is occasional bleed-

¹ See Dr. Robert Lee's Clinical Midwifery. Second Edition, p. 90.

ing from the surface of the cervix, a thin, ichorous, acrimonious, and offensive discharge, and the aspect of the patient is akin to the malignant cachexy. I have felt the cervix in a case of this kind, and have doubted at first whether the disease were malignant. This is one of the cases in which the induration may sometimes last to the end of pregnancy, and oppose the dilatation of the os. The diagnosis of syphilis is to be formed from the previous history, and other existing indications of it in the integument, periosteum, etc. The progress of the disorders, during pregnancy, is different. The morbid conditions of the cervix, in the venereal state, do not become materially aggravated; but, on the contrary, the induration may become partially, or, I believe, even altogether effaced under the physiological softening of the cervix. Such a case is more like cancer at the beginning than at the end of gestation. True carcinoma of the cervix, although in some cases it appears to have been rather tardily developed, generally, as in the first case here recorded, rapidly progresses, destroying the inner surface of the cervix, and infiltrating and hardening the deeper and adjacent parts. When examined by the finger in an advanced state, there cannot well be any mistake about it. The circle of the os is more open than in normal pregnancy, from the positive loss of substance; while its edge, and the whole inner surface of the cervix, is rutted and indurated, with a surface which bleeds and breaks down under the touch of the finger; which, on being removed from the vagina, brings with it some of the foetid discharge. If the finger be not introduced *within* the cervix, and the outer or vaginal surface of the cervix be not yet destroyed, this part of the lower segment of the uterus feels like a solid uneven tumour, which is interposed between the finger and the presenting part of the child. If there have been much bleeding, or a sudden hæmorrhage towards the end of pregnancy, and a clot have formed within the cervix, the malignant disease not having previously been known, the physical conditions may, when first felt, resemble placenta prævia; especially if the disease be of a fungoid character. If the finger, however, be passed *within* the cervix, so as to displace or go beyond the clot, the solid uneven surface of the cancerous mass will be perceptible.

The prognosis in cases of carcinomatous degeneration with pregnancy is most unfavourable to both mother and child. The mother may die from the exhausting effects of cancer,—viz., hæmorrhage, copious watery discharge, vomiting, etc., before labour sets in. She may die undelivered, from ruptured uterus, or of exhaustion from protracted labour. Or, if she survive the immediate perils of delivery, she may sink exhausted a few hours or a day or two afterwards. If this does not happen, the disease generally goes on more rapidly, perhaps rendered less tolerable from some injury to the soft parts by the delivery, and ends in a few weeks, or possibly a few months, in death.

The death of the child is very common. It frequently happens (in about a third of the cases) that premature labour, between the sixth and seventh month, spontaneously ensues, the child sometimes having lain dead and putrid in the uterus, and then easily escaping during labour, as in Case III; this is certainly the most favourable termination for the mother. In other cases it is necessary to destroy it to effect delivery; or it may die in the course of delivery, as in Case I.

I know of no facts to shew whether the few who are born alive, and live, inherit the taint of cancer; but assuredly such a child would need the breast-milk of a healthy wet-nurse, and the same hygienic care and solicitude in its rearing which are given to scrofulous children.

TREATMENT. Some cases are recorded in which parturition at term has been accomplished by the natural powers, the mother surviving the act,¹ and the child being born alive. But so favourable a termination of labour, however it may be hoped for, is hardly to be expected. Death of the fœtus at the sixth or seventh month, its retention and putrefaction in the uterus, and its comparatively easy birth, have already been alluded to, and may be reckoned upon as probable events.

Our principal resources in the management of such cases are the artificial induction of premature labour, lessening the child's head, dividing the diseased structures, and the Cæsarean section.

Dr. Robert Lee's opinion, with reference to the first of these operations, is very decided. "If abortion", says he,² "does not take place where pregnancy exists with cancer of the os uteri in an advanced stage, the membranes of the ovum should be perforated if possible, and at the seventh and half month if the disease is less extensive." When I saw the subject of the first case which has been related, at the seventh month of her pregnancy, I considered the propriety of puncturing the membranes; but I determined against it. There would not have been the difficulty and even danger in doing so, which in some cases must be encountered in order to perform it, and which, I apprehend, might be sufficient to deter the practitioner from undertaking it. If the cervix were blocked up by cancerous disease, which must be passed through or broken down in order to reach the membranes, causing thereby serious hæmorrhage, then this operation ought to be avoided. But the membranes in my case could be touched, and might have been easily perforated. It appeared to me, however, that pregnancy, instead of aggravating the suffering of the patient, had rather lessened it, and I thought it something to gain two more months of life and comparative relief in a disease which could not but end fatally in a short time. The extent of disease at this time would, in my judgment, have been a most serious obstacle to the passage of a seven months' child, which would have probably needed instrumental assistance for its delivery, and the exposure of the diseased structures to the chance of laceration, and of the mother to the utmost peril. I could see nothing in the delivery of a seven months' child, which could so exempt the woman from danger as to counterbalance the positive benefit of a prospective life of two months to her. I therefore preferred to meet whatever increased difficulty might arise from a large child when labour came on, to bringing on by my own act, a crisis which was full of peril. I doubt the prudence of inducing premature labour in these cases as a rule. On the contrary, the rule with me would be, to leave the whole care of pregnancy and the time of labour to nature, and to do all that I could to alleviate suffering and urgent symptoms, and to preserve to the parent as much as possible of the nine months of gestation, which forms no inconsiderable part of the duration of a case of cancer.

When labour sets in, we must be guided in our choice of the method

¹ LEVER (Dr. J. C. W.). Case in Guy's Hospital Reports, April 1842.

² LEE (Dr. Robert). Clinical Midwifery. Second Edition, p. 94.

of delivery by circumstances. It is desirable not to interfere, as long as the patient's powers and the strength of uterine action are well sustained in the efforts to dilate the os. It may happen, that suddenly the diseased mass will give way, and the lower portion of the uterus be either rent or detached, and carried before the head in its sudden escape into the vagina. But if the vital powers, already enfeebled by the drain from the diseased part, begin to fail, and the os uteri be still insuperably rigid and undilated, it has been recommended to make incisions through the obstructing portion, with the hope of giving room for the passage of the fœtus. In the two cases above related, this procedure appeared to be quite impracticable. The whole circle of the cervix was so implicated in the disease, and the indurated matter was so deep and massive, that there was no edge to cut, and an incision would have merely inflicted a wound upon the diseased structures and have caused them to bleed, without opening a way for the escape of the child. Any surgical operation of this kind, to be effectual at all, would require the cutting out of a mass of the cancer, which would be hazardous in the extreme, and indeed impracticable. Incisions through the cervix are only available for the purposes of delivery in those extremely rare cases when the cervix-tissue is hard and unyielding, but not from cancer (unless in a very early stage), and does not open under the forces of labour, which may have been spent upon it until the cervix is inflamed, and the female well nigh exhausted. The os may then be dilated by the knife, and the operation is well-defined, easy of accomplishment, and, as far as it has been performed, effectual in its purpose.

Abandoning therefore the idea of incision in these cases, there is the alternative between craniotomy and the Cæsarean section. The second case terminated as favourably by the first operation as could have been expected, but still it ended with the birth of a mutilated child, and the death of the mother one month afterwards. Had the disease made a little more progress, had it been as great as in the first case, the woman, in all probability, would have died undelivered, so difficult would it have been to remove the child by the crotchet, with the feeble endurance of the patient. I cannot but think, that the immediate risk of death to the mother, when the disease is much advanced, setting aside all consideration of the child, is as great in delivering by craniotomy as the Cæsarean section; and on the score of suffering, the latter is certainly the most favourable. When, however, after a careful study of the case, there is a prospect of delivering through the natural passages (as in Case II), although it be discouraging, and, at the best, must be attended with great risk, yet it is desirable to give the preference to it. But if the patient's powers seem quite unequal to sustain the shock and suffering of a protracted delivery through structures which will bleed and lacerate, and if the *fœtal heart is heard to beat*, I think that the Cæsarean section offers a speedy and a certain delivery, with no greater hazard, imminent though it be, and at the same time may rescue the child. The preservation of a child's life, under circumstances of hopeless disease of the mother, ought to turn the balance in the consideration of the means employed in its favour. In such cases, auscultation of the abdomen, to hear the fœtal heart, on which alone we can safely rely for the fœtus being alive,

ought to be attended to. This ought to be ascertained in any case so complicated, during that part of labour which is entrusted to the natural powers, because the sudden death of the mother from rupture of the uterus, as in Case 1, or from sudden and rapid exhaustion, may require the abdomen and uterus to be opened to save the child. A want of preparation, and an uncertainty as to the life of the child, may just let the moment slip by in which the child might be preserved.

The moderate inhalation of chloroform, in cases of this kind, would be most desirable; but the friends of the patient ought to be clearly apprised of the chance of sudden death from the disease itself, so that, should it happen, it may not be ascribed to the chloroform.

13, Devonshire Square, Bishopsgate Street, February 1851.

CASE OF LABOUR COMPLICATED WITH CAULIFLOWER EXCRESCENCE OF THE UTERUS: WITH REMARKS ON THAT DISEASE.

By JOHN ROSE CORMACK, M.D., F.R.S.E., etc.

(Read before the Medical Society of London, Nov. 30, 1850.)

THE case which I am about to bring under the notice of the Society is instructive, when viewed in connexion with other recorded cases of the same disease. It calls attention to the use of certain *palliative medicines*; and it likewise brings under our notice *excision* as a means of cure, or of prolonging life when the malady cannot be extirpated. It is also a remarkable case, from the circumstance of both the patient and her husband having been ignorant of the existence of disease, till I discovered it when called in at the end of the natural term of gestation.

During September 1847, I was requested by Mrs. G., aged 30, married for five years, and the mother of one child, to attend her in her approaching confinement, which she said she expected about the end of November. She had had two miscarriages. She said that her general health was good, and that since the third month of her pregnancy she had enjoyed better health than since the birth of her child. Some months before she became in the family way, she had suffered greatly from menorrhagia; and being then in Edinburgh, she went to consult Dr. Simpson. He was not at home, but she saw his assistant, who prescribed, and requested her to return on a future day to see the Professor. Finding great benefit from the medicine ordered (which, I believe, was gallic acid), she did not go back; and had never since asked, nor, as she supposed, required medical advice. She said, that about once a month she had had, during her pregnancy, a slight coloured discharge for a day or two, and also some colourless discharge; but that as this had been the case during her first pregnancy, and as it did not seem to weaken her, she was not uneasy about it.

From the day in September when she asked me to attend her in her confinement, till I was actually called to her in labour on the 28th of November, she never made the slightest complaint to me,

though I saw her frequently. During that period, she took much exercise; and she did so, not only with impunity, but with advantage to her general health.

About 5 P.M. on the 28th of November, I was summoned to attend immediately upon Mrs. G., who, I was informed, was then in labour. Upon my arrival, in half an hour afterwards, at her bedside, I found that she was not in pain; and, according to her own statement, and that of the nurse, she had hardly experienced any symptoms which resembled approaching parturition, except that she had discharged, *per vaginam*, a watery fluid in such abundance as to soak through the bed. I was told that the membranes had been ruptured, and that the waters were still coming in large gushes. As I entered, the discharge was observed for the first time to have given a sanguineous stain to the linen: and on proceeding to make an examination, I found her bathed in blood. She suddenly became very faint; and from the blanching of the countenance and the ebbing pulse, it was evident that the discharge from the vagina was telling rapidly and dangerously upon the vital powers. Upon introducing the finger, I felt—surrounded by soft and imperfect clots—an irregular, tolerably firm, and somewhat elastic mass, obstructing the upper part of the vagina. From the sensation which this mass communicated, and from the alarming way in which blood was flowing, I at first suspected that I had to deal with a case of placenta prævia. A moment, however, sufficed to remove this erroneous impression; for I found that I was easily able to carry my finger round the base of the tumour, and to make out that it did not proceed from the interior of the uterus, but was attached around its orifice, externally, and chiefly to the anterior lip. At this time, the os uteri was just sufficiently patulous to admit the point of the fore finger.

My first proceeding was to inject a strong solution of alum into the vagina; taking care that it reached and thoroughly bathed the os and cervix uteri. I next introduced a compress saturated with the same lotion, and then firmly plugged the vagina. I also had an opiate enema administered by the rectum. She soon fell asleep, and in two hours awoke refreshed, though very weak. During this time, I learned from the husband that the colourless discharge which she had before spoken of to me was watery and limpid, and not like mucus. This was afterwards confirmed by herself; and before leaving the house, I announced to both parties the nature of the case:—that there was a growth from the uterus, from which the water and blood had poured; that the membranes were still unruptured; and that labour had hardly commenced.

At six in the morning of the 29th, I was sent for in consequence of the pains having become sharp and regular. There had been no more loss of blood, and the pulse and general condition of the patient had so much improved, that I resolved to withdraw the plug (which was causing much discomfort), and satisfy myself as to the state of matters by making a digital examination.

The plug was found to be saturated with a reddened fluid, and to yield a repulsive odour, much resembling that of very fetid lochial discharge. The tumour which had before been large and

turgid, could now be best compared to a superficial roughness, amid which were some more decided elevations. The os and cervix were rather tender to the touch, and so they had been at the first examination, though no sensation was communicated to the patient by freely manipulating the tumour. For the next eleven hours nothing remarkable occurred. There was a great drain from the seat of the disease of a fluid, which may be well compared to dirty and faintly reddened water. This, when excessive, was generally arrested or moderated, by injecting alum and using the plug. At 5 P.M., the labour pains became strong and frequent, but the os uteri did not dilate in proportion, and at this time it felt rigid, and on one side angular. I now introduced within the os a piece of dry sponge smeared with oil. From this time the pains became almost constant, and the dilatation of the os was evidently considerable at 7 o'clock. For some hours there had been little loss of blood; and till 8 P.M. I did not think that any further interference was likely to be required. At this time, however, there was a sudden accession of hæmorrhage; and as the os uteri was now pretty well dilated, I punctured the membranes, and administered three successive doses of the ergot of rye. A living child was born at 9 o'clock; the placenta soon followed; and the uterus contracted naturally. After taking some tea with toast and a little brandy, she fell asleep; and I then left her with pretty a good pulse.

On the following morning, I found that she had passed an excellent night, without requiring to take the opiate draught which I had conditionally ordered. I found the tumour had regained very much of the same character as when I first explored it, though it was much less bulky. It was still destitute of sensation, but around its base there was a good deal of tenderness complained of. Everything went on well till the fourteenth day—the strength increasing, the ability to nurse good and improving. The lochial discharge—or at least a moderate sanguineous discharge—continued. In consequence of local pain, I was asked to examine the womb. I did so, and found a state of matters very similar to what I had found at my last examination. I took occasion, however, to explain the nature of the case, and to hint at the necessity which might arise for operative interference. She, however, could not be persuaded, that if she had so long had the disease without knowing it, it could now be necessary to regard it in so serious a light.

With difficulty she consented to a consultation. About the twentieth day after her confinement, Dr. Henry Bennet saw her along with me; and in consequence of the pain which she felt in the base of the tumour, and the return on two occasions of alarming hæmorrhage, we both agreed that it would be proper to remove the diseased mass, with the portion of the uterus to which it was attached, without much longer delay. She objected, however; and thus much precious time was lost, both as regarded relief from pain, and an ultimate cure.

Some time afterwards, when the disease had considerably advanced, when no sleep could be had at night without an opiate, and when there was a good deal of tenderness in the parts, she was seen by Professor Fergusson, who discountenanced operative interference, from his conviction that it would not accomplish a radical cure. He did not, however, absolutely negative the propriety of the proceeding,

should the sufferings of the patient so increase as to make her desire relief by the knife or ligature. The debility and timidity of the patient increased; and thus much more time was spent. I may here state, that during the first part of this time great abatement of the discharge was obtained by the internal administration of gallic acid; and that pain was restrained within the bounds of endurance by opiates. At last, it was only by an enormous consumption of morphia that life was made endurable; the attacks of hæmorrhage were frequent and frightful; and the whole of the cervix uteri and vagina was excoriated, from the foul discharge with which they were constantly bathed.

On the 6th of February 1848, at the urgent entreaty of the sufferer, Mr. Fergusson removed the diseased mass by the knife, having first put her under the full influence of chloroform, and dragged down the womb within reach. The excrescence was entirely removed, but the incision (though a large portion of the cervix was cut away), was necessarily through indurated structure. The portion of the uterus which was removed, presented hardly any indication of the spongy growth to which it had given a basement. Indeed, the naked eye could only detect a flabby granular surface; and the touch could only recognize hardness of tissue and roughness of surface. A gentleman who promised to make a microscopic examination of the excised parts unfortunately forgot to do so.

Severe sickness came on some hours after the operation, probably dependent upon the chloroform, which had been administered before and during the operation to cause anæsthesia. After this, she improved rapidly in her general health, notwithstanding several pretty severe attacks of hæmorrhage. The dreadful pain had now ceased to torment her; the appetite was good; and she was gaining flesh and strength. In a month after the operation she was able to walk out a little. About this time, however, she began to complain of shooting pains in the back and pelvic region, and occasionally at night was obliged to have recourse to an opiate to obtain sleep. The incised surface till this time had presented a smooth and healthy surface, both to the finger and to the eye; but now, upon examining with the speculum, it was found to have assumed a granular surface. This condition rapidly increased; and within two months from the operation, there was a fresh excrescence, sometimes as large as a pigeon's egg, and at other times not bigger than a hazel nut. From this growth a profuse watery discharge flowed at intervals; and as time advanced, she had every two or three days frightful hæmorrhage, which, on several occasions, had nearly proved fatal. The pain was constant and of the most agonizing character. Besides the free application of belladonna to the sacrum, she took for several weeks before her death so much as three ounces a day of the Edinburgh solution of the hydrochlorate of morphia, in clysters, and by the mouth. Ulceration went on rapidly; and the atmosphere of the room in which she lay was intolerably offensive from the discharge, though deodorizing agents were freely used.

At last this poor sufferer was released from life on the 17th July, the immediate cause of death being exhaustion, from which she never rallied, after one of the attacks of hæmorrhage already referred to. For the last three weeks of her existence these attacks had been so

sudden, so violent, and so frequent, that it had been found necessary to keep the vagina constantly firmly plugged. The parts were bathed with an infusion of opium, once every six hours, and a clean plug was changed at least once every twenty-four hours, but generally at shorter intervals.

Death occurred about seven months and a half after her delivery; and rather more than five months after the operation.

EXAMINATION OF THE BODY FORTY-EIGHT HOURS AFTER DEATH. This I made with the kind assistance of Dr. G. T. Gream and Mr. A. B. Barnes. The emaciation and anæmic condition of the body were excessive. The arch of the pubes was removed, and the abdomen laid open, so that the uterus and adjacent parts might in the first instance be examined without displacing or handling them. The cervix uteri was absent. The vaginal end of what remained of the uterus was ulcerated, as was likewise the whole of the upper part of the vagina. When carefully looked at, the surface of the uterus which had been incised was found to have on it the same flabby granulations or vascular excrescences, which were noticed in the portion removed by Mr. Fergusson. They were rather more florid. The surface on which these growths were implanted was of a hard and almost cartilaginous consistence. The body of the uterus was harder, and rather larger than natural. It was dark—as if stained with a pigment—on its peritoneal surface. The vagina at its upper part was deeply ulcerated, and was easily torn. The urethra, the bladder, the ovaries, and the rectum, were free from disease.

REMARKS. It is *possible* that if the operation had been performed earlier in this case, the result might have been somewhat better. Even as it was, life was prolonged, and a brief respite from suffering was likewise obtained. The effect of the gallic acid in restraining the menorrhagia at an early stage of the disease is an interesting fact, confirming what every one in the habit of using this medicine must have observed,—that it rarely, if ever, fails to manifest its anti-hæmorrhagic virtues, even under circumstances apparently the most different. It is a medicine which we may almost give *empirically* as a styptic, so wide is the range of its application: in menorrhagia, probably, no medicine is equal to it. Gallic acid, however, though useful in restraining the hæmorrhage depending upon cauliflower excrescence of the uterus, is not a remedy for that disease; which, so far as our knowledge at present extends, cannot, it may be safely stated, be cured by medicines or hygienic treatment.

Can cauliflower excrescence of the uterus be permanently eradicated by the knife or by the ligature? If not, can it be made less painful and less rapid in its course by surgical interference? These are the questions which demand answers.

Unfortunately, cauliflower excrescence of the uterus is not the seat of pain, except in its later stages; and therefore rarely comes under the notice of the medical adviser at that period when complete removal can only be hoped for. The case which I have detailed might have had a very different issue, if the diseased mass and the surface from which it sprang had been excised twelve months earlier,—at a time when the only symptom was the limpid discharge. Had the operation been tried with all convenient speed after delivery, the miserable existence which

the patient had after her confinement might have been ascribed by some to the use of the knife. The case must now, however, be held as proving with all others recorded, that such tumours, though they may long remain pretty stationary, at last inevitably terminate fatally. This fact is of itself a strong argument in favour of resorting to operative interference as early as possible, for it is then, if at all, that the morbid mass can be eradicated. In Mrs. G.'s case, when the operation was performed, a cure was not expected; and the knife was used only with the hope of accomplishing what was attained, a respite from impending death.

On the 3rd of Dec. 1845, Dr. Simpson read before the Medico-Chirurgical Society of Edinburgh a communication upon excision of the cervix uteri, in which he stated that out of eight cases in which he had performed this operation, in three the amputated vaginal portion of the cervix was the seat of what he terms "carcinomatous disease". In one of the cases, one of cauliflower excrescence, the patient had remained perfectly well from the date of the operation in 1840, and in the interval had given birth to and had nursed three healthy children. In a second patient, whose health and strength were greatly reduced, the excised part presented a tumour having all the microscopic and other characters of Müller's *carcinoma fasciculatum*. When Dr. Simpson read his paper to the Society, two years had elapsed since the operation, and the patient was then continuing to enjoy the best of health. In the third case, the diseased cervix presented a well marked specimen of Müller's *carcinoma reticulare*. The patient remained well for eight months, but the disease then recurred, and proved fatal fourteen months after the operation. Dr. Simpson's published experience is therefore an encouragement to operate.

A powerful argument in favour of the propriety and rationality of attempting a cure by operation is to be found in the able researches of Dr. Andrew Anderson of Glasgow.¹ He has shown that cauliflower excrescence is "a disease which cannot spread by simple germs, as ordinary cancer is supposed to do; for, in order to its growth, a regularly formed membrane is necessary, and not merely active cells; and this consideration", adds Dr. Anderson, "renders more probable the success of the operation of removal of the tumour with the portion of the os uteri from which it grows." According to Dr. Anderson, "the basis" of the cauliflower excrescence "is a membrane of extreme tenuity, ramifying most complexly, amply supplied with blood, and possessing the power of forming from that blood a whitish 'cell-substance', which is deposited in a layer around it." He conceives that "the white substance which constitutes the bulk of the structure is formed by the membrane as a matrix, and from the blood with which that membrane is supplied, by a change in the corpuscles." He had no opportunity of examining the characteristic "watery discharge"; but he believes that it will be found to flow from the white substance directly, probably in consequence of the bursting of the external layer of cells, they being as quickly reproduced within; that thus a constant drain from the blood is going on, and made more exhausting by occasional actual hæmorrhage when the tumour happens to be congested, or accidentally injured.

It appears, then, from Dr. Anderson's researches, that cauliflower

¹ ANDERSON (Dr. A.), *Edinburgh Monthly Journal*, vol. for 1842, p. 885.

excrescence differs from every known malignant tissue in its mode of growth. "It grows *by imbibition from the blood*, but *beyond the capillaries*." This view of the morbid anatomy of the disease, its uniformly fatal issue when left alone, and the comparative success of Dr. Simpson's operations, would induce me, if consulted at a very early stage, unhesitatingly to advise excision, provided the diagnosis demonstrated the growth to be of that description which Dr. A. Anderson has described. If asked at a later period, I would not advise the same course to be adopted, unless the symptoms were, as in the case of Mrs. G., so urgent as to threaten speedy death; and then, we are not only justified in operating, but imperatively constrained to do so. If an operation be decided against, the proper treatment to adopt would, I apprehend, consist in the use of astringent anodyne injections, and gallic acid as a constitutional remedy. Each case will however demand its own special appliances.

The question as to the disease being hereditary I do not now enter upon. I may state, however, that the mother of my patient died from what was described to me as "cancer of the womb".

Essex House, Putney, November 1850.

THE CHARACTERISTIC PECULIARITIES, PATHOLOGY, AND TREATMENT OF RHEUMATISM,

MORE PARTICULARLY AS IT IS FOUND PREVAILING
WITHIN THE TROPICS.

By JAMES BIRD, A.M., M.D.

IMPROVED views of the humoral origin of Rheumatism have from time to time arisen, to claim the attention of the profession; and the exclusive opinions of solidism, from the beginning of the present century, have been gradually giving place to that more eclectic and rational system of pathology, which looks not on diseases as confined to particular organs or tissues, but as the manifestations of more general and deep-seated lesions, to be sought for in the abnormal deviations of the blood, and the perverted actions of the nervous system. Among those whose judicious observations have tended materially to improve our knowledge of this subject, the names of Drs. Todd and Bence Jones stand prominently forward, as worthy of honourable mention. There is yet, however, much left for study and analysis in the natural history of the disease, particularly as it is found prevailing within the tropics, among a class of patients subsisting almost exclusively on non-azotised articles of diet. Excepting fever and cholera, there is no disease which proves more fatal to the sipahies of our native army; nor is there any which annually renders so many Native and European soldiers unfit for the active duties of their profession, by placing them on the invalid or pension list. Tropical climates seem to have considerable influence in modifying the character of rheumatism among the people of India; and the completion, in that country, of a truly philosophical investigation into the chemical pathology of this and other diseases, might be attended with useful results, in helping us to ascertain the true nature of the rheumatic diathesis, its modifications

under climate, and the relation of rheumatism to other diseased conditions. In this country, too, the practice pursued in rheumatism is undefined and somewhat empirical; one employing lemon-juice, another colchicum, and a third a purely alkaline treatment, without any explanation of the principles, or differences of diseased condition, on which such opposite systems of treatment are recommended. It is therefore matter for wonder and regret that, with the exception of the late Dr. Malcolmson in his *Essay on Beriberi and Rheumatism*, and Dr. Geddes in his *Clinical Illustrations of Indian Disease*, almost every writer on tropical diseases has passed over, without notice, this prevalent and important complaint. The latter author states, that he found rheumatic cases formed about one-eleventh part of all other complaints admitted; and that, during the five years he was in charge of the Madras European Regiment, 457 cases were admitted; of which, the detailed records of 312, including relapses, and occurring in 160 individuals, formed the subject of his statistical remarks and experience. Regarding the seat of the disease, he observes: "On a general review of the whole, forty-seven individuals are discovered to have been subject, either in their primary or relapsed attacks, to rheumatism, both in the muscles and ligaments; forty-three had those structures affected along with that of the periosteum; twenty-eight and twenty-three had respectively disorders of the ligaments, or of the muscles only; in five individuals the disease was confined to the periosteum; in eight this structure was attacked with that of the joints, and in three with that of the muscles only. In the remaining three, the disease was chiefly of a neuralgic character, attended, in two, with rheumatism of the ligaments and muscles."

In the narrow compass of this paper it would be impossible to enter on a complete consideration of the several points connected with the rheumatic diathesis, its paroxysmal progress, and local manifestation in particular organs: I must, therefore, confine my present observations to—1st. Leading varieties of tropical rheumatism, and the points in which articular rheumatic inflammation differs from simple suppurative inflammation. 2nd. Origin of the rheumatic diathesis, nature of the paroxysmal fever accompanying articular inflammation, and causes which produce them. 3rd. The general principles of treatment.

I. LEADING VARIETIES OF TROPICAL RHEUMATISM, AND THE POINTS IN WHICH ARTICULAR RHEUMATIC INFLAMMATION DIFFERS FROM SIMPLE SUPPURATIVE INFLAMMATION.

Tropical rheumatism presents two principal forms; the sthenophlogistic or acute, and the astheno-cachexial or chronic. The former, in its attack of particular tissues, shews a preference for the compound membranes of a mucous and serous kind; the latter affects the muscular and nervous tissues, and has much of a neuralgic character, accompanied by vitiated nutrition, and wasting of the parts affected. The very acute variety, associated, as in Europe, with pericarditis, or endocarditis, is a form of the complaint seldom presented to observation in India; though cases presenting the ordinary symptoms of heat, pain, redness and swelling of the joints, accompanied by fever, occur both among natives and Europeans. The greater number of such

attacks, however, happen among those who are located in the colder, drier, and more elevated table-lands of that country; while the more common form of the disease, prevalent among the natives, particularly those inhabiting malarious districts, is the astheno-cachectic variety; which, when it assumes the form of periostitis, has all the character of mercurial syphilitic cachexia. This latter has been sometimes named pseudo-rheumatism, though no well founded distinction between it and rheumatic affection of the synovial tissues of the joints has yet been established.

Stheno-phlogistic rheumatism is generally attended by disorder of the intestinal mucous membranes and abdominal secretions, much constitutional disturbance, and aggravation of the fever and pain at night. It is often associated with hepatic congestion and colonitis; but when the phlogistic symptoms are unsubdued, they are accompanied by much destructive irritation and waste of tissues, total failure of the digestive powers, emaciation, loss of strength, pale anasarctous visage, and other signs of cachexia, so that too active or injudicious employment of bleeding, or of the diaphoretic and purgative treatment, must be guarded against. The following are cases of the stheno-phlogistic kind.

CASE I. Joseph Fido, engineer of the steamer *Atalanta*, aged 23, was attacked, on the evening of the 8th August, 1838, by extensive swelling and redness of the left knee-joint, accompanied by tenderness of the parts, and inability to move the limb. The inner edge of the knee was most affected, but the whole presented a puffy elastic swelling of the joint, accompanied by slight heat of skin, accelerated pulse, some degree of headache, furred tongue, and a constipated state of bowels, which had existed for some time previous to the attack. Mr. Sproule, the assistant-surgeon of the vessel, repeatedly abstracted blood from the joint by means of cupping-glasses, caused the patient's bowels to be freely acted on by purgatives, and then administered four grains of calomel, with tartar-emetic solution, three times daily, till the gums became slightly tender from the calomel. This result followed in a few days, accompanied by diminished swelling of the knee-joint and disappearance of all cutaneous redness, with a return of the skin's natural temperature. The joint, which was still swollen, remained incapable of motion. Repeated blistering was had recourse to, previous to his admission into the European General Hospital at Bombay, on the 11th of September. At this time, swelling and thickening of the parts surrounding the joint still existed, accompanied by inability of motion. Straps of mercurial plaster were applied around the joint, iodide of potassium in sarsaparilla decoction was given daily, and purgatives, with the addition of colchicum wine, were administered occasionally. Under this treatment the joint soon resumed its natural appearance and power of motion, and the patient was discharged well.

The next is a case illustrating the same disease as it attacks a native of India.

CASE II. Body Sing, private in the 18th Regt. of Native Infantry, aged 30, admitted at Kalludghee, 3rd September, 1835. Complained much of pain in the joints of his upper and lower extremities; swelling, heat, and tenderness of the left knee; pulse 120, firm; bowels re-

ported regular; tongue excited. He took an emetic, which produced vomiting of much bilio-mucous matter; he was afterwards bled from the arm to fifteen ounces, without experiencing any relief from pain. The blood drawn was cupped and a little buffy. From the 5th Sept. till the 10th October, the treatment consisted of small doses of calomel with fifteen-grain doses of Dover's powder, administered at bed-time, followed next morning by occasional brisk purgatives, combined with full doses of colchicum wine. After this time, the knee-joint being very painful, accompanied by loss of flesh, and other symptoms of incipient cachexia, the patient was ordered to take half a pint of compound sarsaparilla decoction, with an equal quantity of warm milk, twice daily. On the 28th following, the health was much improved, and the pain and swelling of the knee-joint were greatly lessened. From the 28th October to the 12th December, when he was discharged to perform easy duty, he took three-drop doses of cajeput oil twice daily, and had his left leg and knee-joint firmly bandaged with flannel. Copious perspirations followed the administration of the oil, giving great relief to the rheumatic symptoms, and a small tender swelling, which made its appearance on the sternum, completely subsided at the same time.

Asthenocachectic rheumatism is so generally associated with arthritic periostitis and constitutional *cachæmia*, that we must beware of employing long-continued mercurial courses for the cure of even its sthenophlogistic variety, as these are apt to give rise to much derangement of the primary assimilation and to obstinate forms of periostitic inflammation. This caution is particularly necessary in regard to the mercurial treatment of rheumatism among the natives of India, who, from their more general use of non-azotised articles of diet than the European inhabitants of India, possess less vital power of resistance to the destructive metamorphoses of the tissues, and heedlessly employ cold bathing while under the constitutional effect of mercury.

The periostitis which we meet with in such cases affects the head, the vertebræ, or the sternum, and sometimes the shin-bones; but when the cachexia accompanying it proves fatal, either by diarrhœa, dysentery, or hectic, follicular ulceration of the intestines is generally found associated with the other symptoms. The strong constitutional disposition existing in such cases towards wasting decay and ulceration of particular tissues, originates probably in the disproportionate use of farinaceous articles of diet without a sufficient admixture of azotised food; and the extreme irritability and obstinacy of ulcers among the natives of India may be ascribed, I think, to the same cause. There is good ground for concluding that the frequency of periostitis in Indian rheumatism arises from the enervating influence of climate, malarious causes, and a poor vegetable diet; though its occurrence, consecutively to abused mercurial courses and exposure to cold, is observable among well-nourished Europeans unattended by that defective assimilation and rapid emaciation, which accompany it in native constitutions. Such cases, however, have been generally those of seamen who have been exposed to cold and the use of salt diet, and were received into hospital from the ships in harbour. The constitutions of these men manifested slight signs of a scorbutic diathesis, caused by the

salt diet, and by neglect of those measures for keeping the bowels in a healthy state of excretion. Hence the rapid and well-marked utility in such instances of removing the men from ship-board to a hospital on shore, with the use of fresh meat diet, warm bathing, the necessary employment of purgatives, and an allowance of lime-juice and potatoes.

As cachexia advances in cases of this kind, attended by a complication of rheumatic symptoms, the skin, which becomes harsh and dry, is covered by white scales, or papular eruptions, having all the character of obstinate psora. The intimate sympathy existing between the epithelial covering of the intestinal mucous surfaces, and that of the skin, helps us to an explanation of the occasional association of cutaneous eruptions with derangements of the primary assimilation and intestinal mucous surfaces, as observable in the different forms of arthritic complaints. This deranged condition of the digestive organs and skin may be found co-existing in most cases of phlogistic and cachexial rheumatism; but one or other of these has precedence and predominance in the complaint, just in proportion as there exists some original defect in the assimilating power of the one, or the eliminating function of the other.

The intimate relation that subsists between milder and modified degrees of scorbutic *dyscrasia* and the forms of *astheno-cachexial* rheumatism, has of late years been almost lost sight of; notwithstanding that the great and accurate observer, Sydenham, described a species of rheumatism resembling scurvy in its capital symptoms, and requiring nearly the same method of cure; and which he distinguished by the name of scorbutic rheumatism. This species of the disease will be found, under ordinary circumstances, on ship-board, and among European sailors, using in excess salt-meat diet, with little or no admixture of succulent vegetables; as well as among bodies of men, on land, living on farinaceous seeds destitute of anti-scorbutic properties, or on a diet of unvaried character with total abstinence from animal food. Such are the circumstances, aided by extreme aridity or dampness of climate, under which land scurvy prevails among prisoners in the jails of India, and also among bodies of native troops, in particular seasons and localities. The same unvaried farinaceous character of diet, used by many of our sipahies, predisposes them to attacks of cachexial rheumatism. In the eighth volume of the *Calcutta Medical Society's Transactions*, there is an interesting account, by Messrs. Ross and Macnab, of this kind of land scurvy, as it appeared in 1834, among the native troops at Nusseerabad. Many of the cases appear to have been of a mixed scorbutic and rheumatic character; and so closely, says Mr. Macnab, did the excruciating pains of the extremities simulate rheumatism, that, in some instances, the distinction could not well be established; and even when tumefaction took place about the joints or in the periosteum, the difference was by no means distinct. Removal of the patient from the station, and change of air, were attended by well-marked benefit; and the transition from an arid to a milder and more humid state of the atmosphere was followed by amelioration of the malady among the troops.¹

CASE III. William Collier, baker of the ship *Herefordshire*,

¹ Transactions of the Medical Society of Calcutta, vol. viii, p. 118.

aged 26 years, was admitted into the European General Hospital, at Bombay, on the 8th Dec. 1836, complaining of swelling, pain, and stiffness of the large joints, more particularly the elbows, accompanied by loss of appetite, leucophlegmatic countenance, and tenderness and enlargement of the right tibia. He had been more or less affected, on ship-board, by these symptoms for the three previous months, had gradually lost flesh, and used nothing but friction with camphorated liniment to the swelled joints. He was ordered to take half a pint of compound sarsaparilla decoction, with three grains of iodide of potassium twice daily, along with three ounces of diluted lime-juice, and was placed on the chicken diet of the hospital, with half a pound of potatoes. His health gradually improved; the swelling of the joints, and the tenderness and enlargement of the tibia disappeared; and the patient was quite well by the 2nd of December, twelve days after his admission.

CASE IV. James Cleet, aged 30, seaman of the ship *Herefordshire*, was admitted into the European General Hospital on the 17th Dec., 1836, complaining of nearly the same symptoms as the last-named patient, with the addition of some livid spots on the calf of his left leg. He was treated by four ounces of bark infusion, given twice daily, and acidulated with diluted sulphuric acid; used a warm bath at bed time; had the same diet, with an allowance of lime-juice, as the former patient, and was quite well in fifteen days after the date of his admission.

The next case is a still better illustration of the intimate relation between milder degrees of the scorbutic diathesis, and the forms of astheno-cachexial rheumatism.

CASE V. John Reid, seaman, government steamer *Atalanta*, aged 26, was admitted into the European General Hospital at Bombay on the 1st Nov. 1839. He had rheumatic periostitis of the head and sternum, accompanied by pyrexia. The pyrexia was subdued by the warm bath, mercury and chalk, with Dover's powder and purgatives. Was soon after attacked by pain in the cardiac region, unaccompanied by any abnormal sounds of the heart. This was removed by looseness produced by the use of antimonial mixture and colchicum, two ounces of lime-juice being allowed him daily at the same time. Subsequently to this, quinine solution was given twice a day, with an anodyne at night; but the periostitis of the scalp returning, accompanied by pain at the base of the occiput, it was thought necessary to omit for a time the quinine solution, to abstract blood from the temples and nape of the neck, and to apply a blister over the cervical vertebræ from the base of the skull. After a time, the quinine solution was resumed with good effect, and the patient was discharged free from pain, and with a recommendation that he should be sent to England, as he was much debilitated and unfit for duty in a tropical climate. A month previous to his admission, he had been discharged from the hospital cured of a somewhat similar attack, accompanied by scorbutic symptoms.

The graduated forms of rheumatism just described derive most of their difference from constitutional causes of distinction, and the less or greater aberrations of the blood from its normal state; but the distinctions of this disease, according to its seat in various parts, though not affording like important grounds for opposite therapeutical prin-

ciples and modes of treatment, are still of utility in directing the mind of the practical physician to important local differences, associated with equally well-marked gradations of the constitutional symptoms which attend them. The chief varieties of tropical rheumatism, founded on such locality, are those divisions of the disease which have been adopted by M. Chomel. 1. Articular rheumatism, or rheumatism of the joints; 2. Muscular rheumatism, or rheumatism of the voluntary muscles; and, 3. Visceral rheumatism, or rheumatism of certain fibrous tissues situated within the splanchnic cavities. The generality of cases belonging to the first form, as met with in the tropics, oftener present symptoms of the mild chronic variety, than of the intense articular rheumatism of European climates; and though attacks are generally ushered in by febrile symptoms, these symptoms are of less severity than in colder climates, and the disease is less mobile in character. Muscular rheumatism, too, though met with in every part of the body, and usually more amenable to treatment than cases of the articular form, is more frequently met with in the loins and muscles of the limbs than in any other part of the sarcois tissues. This is peculiarly a disease of malarious districts, being very prevalent among the men of native regiments when located in such places.

The following extract from my quarterly report, on diseases of the 2nd Troop Horse Artillery, for 1822, then stationed at Kaira, in Guzerat, embraces the leading particulars of this variety of rheumatism, as we meet with it among Europeans. "The patients complained of severe pain in the joints, tenderness of the plantar fasciæ, and sometimes of the bones, or sharp lancinating pain beneath the sternum. There was seldom any swelling of the joints, but the muscles leading to them were painful when pressed, and were affected, in one case, with cramps. The disease appeared to be connected with considerable derangements of the biliary function; but the appetite was not in any case much impaired. Only two patients felt pain from pressure in the region of the liver; but tenderness of the sternum was a common symptom, and there was generally some variation of the stools from their natural yellow colour, indicating more or less derangement in the secretion of bile. All those who suffered from this disease had been much debilitated by intermittent fevers, or biliary affections, in the previous months." In general, articular rheumatism of the tropics is of the mild sthenophlogistic character, while the muscular variety is of the asthenocachexial type.

Did time or the limits of this paper permit, I could adduce many interesting illustrations of these several local forms of tropical rheumatism; but I must now proceed to inquire whether the phenomena of this disease be identical with those of inflammation and the phlegmasiæ. While rheumatism sometimes appears with all the phenomena of the phlegmasiæ, such inflammation still possesses a specific character, and is in its nature more symptomatic than idiopathic, manifesting in its progress that the local symptoms proceed from a particular constitutional taint, which gives to them a character distinct from that of simple inflammation. This taint may not always affect the joints, but successively various tissues of the body. The mobility of rheumatic inflammation, or disappearance from one part and appearance elsewhere; its pain, too, the manifestation of a constitutional

cause, being frequently diminished by compression and rubbing; its want of determinate progress and limit of duration; its tendency to periodicity and aggravation at night; its extreme susceptibility of impression from changes in the air and of electricity; and its readiness to return after errors of diet or exposure to cold, are all proofs that simple inflammation does not constitute the disease, but that it proceeds from a specific cause associated with abnormal sensibility of the nerves. Though the disease, therefore, generally presents quite as much the character of the neuroses as of the phlegmasiæ, evidence is not wanting to prove that acute articular rheumatism sometimes terminates in suppuration and purulent effusion into the joints affected. Few as these cases are, they are important proofs of the necessity of attending, in our treatment of this disease, to therapeutic means for subduing both local and constitutional symptoms. M. Bouillaud, in his researches on articular rheumatism, instances cases of the disease terminating in suppuration; and in a late discussion on this subject, before the Academy of Medicine, M. Andral brought forward the case of a woman, (who died at the Charité in Paris), whose shoulder-joints, after a severe attack of pneumonia, had been the seat of simple and complicated acute rheumatism. The patient, who was aged, had died in about eight days without an apparently sufficient cause. The interior of both scapulo-humeral articulations contained homogeneous pus, similar in character to that which is the result of phlegmonous inflammation. The surfaces presented innumerable minutely injected vessels, forming the closest network, except on the articular cartilages, where this injection was but slightly marked. The bursæ about the joints were also filled with pus. The parts external to the joints, as the muscles and ligaments, were in their normal condition.¹ In other cases, lesions of the synovial membranes, cartilages, and extremities of the bone, appearing to be of an inflammatory nature, have been found; but as these are not constantly connected with the rheumatic affection, they are not to be regarded as its anatomical cause, and must rather be considered as an effect.

II. ORIGIN OF THE RHEUMATIC DIATHESIS, NATURE OF THE PAROXYSMAL FEVER ACCOMPANYING ARTICULAR INFLAMMATION, AND CAUSES WHICH PRODUCE THEM.

Rheumatism may be generally considered a result of pre-existing lesion of the assimilating and excretory organs of the body; which, on the application of cold, errors of diet, intoxication, malaria, and like exciting causes, gives rise to that abnormal change of the blood which constitutes the rheumatic diathesis. The sudden or continued influence of damp cold air, producing a powerful impression on the skin and nervous system, may in European rheumatism be considered the first link of the chain of changes connected with the generation of the *materies morbi* in the blood. The equilibrium of healthy nutrition is disturbed, the tissues cease to appropriate true nutritive materials, the assimilating functions of the stomach and collatitious viscera are deranged, and the eliminating excretory action of the liver, skin, and kidneys, further impaired or suspended, so as to admit of effete

¹ London Medical Gazette, vol. xlv, 1850, p. 304.

and imperfectly oxydized materials reverting into the circulating fluid. The two former cease to remove from the blood the healthy proportion of carbonised principles, and the constitutional disturbance following this state is still further augmented by the azotised products of secondary assimilation being retained in the system, as indicated by the deposition from the urine of various lithates after nocturnal rheumatic paroxysms. In place, therefore, of the lungs and their supplemental organs, the liver and skin, eliminating, in normal proportion, the non-nitrogenous and azotised elements in the form of carbonic acid and urea, there is now a morbid development of cutaneous perspiration, containing lactic acid, with imperfect excretory functional power of the kidneys. The latter having ceased to remove the normal proportion of urea from the system, excrete in its place uric acid and the urate of ammonia, or the imperfectly oxydized constituents of the body.

It may naturally be asked, is the blood altered previous to the appearance of swelling and local inflammation of rheumatism? Though this be a question most difficult of solution, even as regards other inflammatory diseases, the disposition of the circulating fluid to an altered abnormal condition in this disease, usually precedes the development of its local symptoms. We must admit, however, that cold and other causes occasionally produce rheumatism in constitutions little or not at all disposed to the disease, though the reverse be usually the case. In those instances the altered condition of the blood follows the development of the local affection; but, in either case, the physiological opinion of Simon, that the metamorphic power of the blood globules is increased, affords the best explanation of the chemical phenomena of rheumatism; as this heightened metamorphosis of the blood at once accounts for the greater relative formation of fibrin, and the progressive diminution of hæmato-globulin, as they occur in rheumatic fever and its consequences. The natural tendency of rheumatism is to *anæmia*, and to the production of phenomena, connected with a diminution of the blood globules, as lately prominently noticed by Dr. O'Ferral, in his observations on rheumatic cases with endocardic complications; where, after the employment of depletion and mercury, a cardiac bruit, different from that which originally presented itself, continued to persist, notwithstanding the steady employment of means for subduing inflammatory action.¹

That morbid condition of the blood, which constitutes the *rheumatic dyscrasia*, occurs in all cases where the circulating fluid either becomes deteriorated by the absorption of foreign poisonous matter, as in gonorrhœa, and in certain exanthematous diseases, accompanied by primary and secondary symptoms; or by the reversion into the blood of increasingly morbid secretions, as in uterine affections that give rise

¹ One of the most important bearings of improved physiological knowledge is on pathology and the primary element of diseased condition; and though our facts on the subject of blood-diseases be yet limited and undetermined, there is much reason for the belief, that the healthiness or unhealthiness of the blood itself depends on the greater or less perfection of its cell-development, and that wherever its colouring matter, *hæmatin*, is defective in quantity, or depraved in quality, it proves incapable of fixing the oxygen of the inspired air, and thus gives rise to perverted nutrition of parts, defective calorification, and ultimate anæmia.

to those diseased conditions, and which, though now fashionably treated as local disease by caustic and other like applications, are often, indeed, symptomatic of an acquired state of constitutional dyscrasia. Dr. Geddes, in his excellent clinical illustrations of Indian disease, observed that neither heat, rain, nor cold, appeared to have any reference to the prevalence of rheumatism; but that, in individuals possessing constitutional peculiarities, pseudo-syphilitic virus gave a tendency to the occurrence of rheumatic inflammation, aggravated in some cases by the exhibition of mercury. Impaired primary assimilation, defective clothing, and malarious locality, or whatever other causes, having a tendency to render defective normal excretion, seem to materially aid the absorption of such foreign matters, and to produce, in India, rheumatic cachexial affections of the utmost intensity. Such defective excretion gives rise to the undue production of lactic acid in the body; depending, as Dr. Bence Jones has shown, in some of the stheno-phlogistic cases, on excessive ingestion of azotised food; and, in those of an opposite kind, on the introduction of an insufficient amount of oxygen into the system, and on defective elimination through the excretory organs. In both cases, the urea, which is the produce of the molecular decomposition of the muscular and azotised tissues, is partly converted into uric acid and urate of ammonia, and appears in the urine as a fawn-coloured lateritious sediment.

The anatomical seat of rheumatism is peculiarly confined to the fibro-serous tissues, including the articular capsules, cellular tissue, mucous follicles, synovial glands, the interior ligaments of joints, the muscles and tendons, the dura mater as reflected on the medulla oblongata and spinal cord, the pleura, the peritoneum, and nerve tubules. The localized manifestations of disease are accompanied, according to age, temperament, and previous habits, by almost opposite conditions of the blood, states of *hyperinosis* and *hypinosis*; which differences of constitutional cause give the rheumatic swelling of the joints more or less the character of ordinary inflammation. The local swelling of stheno-phlogistic rheumatism differs from ordinary inflammation in having more a character of irritation than the latter; but, according to the researches of M. Andral, agrees with it in this, that the fibrin in the blood increases from two and a-half or three to as much as ten parts in one thousand, oscillates in the sub-acute form between four and five, and returns to the natural standard in well marked chronic cases. This state of *hyperinosis* is, however, rather relative than absolute, being accompanied by a corresponding diminution of the red corpuscles; which, as Simon supposes, are wasted in the metamorphic production of the fibrine. The following table exhibits the relative increase of fibrin to the ratio of *hæmato-globulin*, both in rheumatism and scurvy, as compared with healthy blood, by which a well-marked analogy between the conditions of rheumatic and scorbutic *dyscrasia* is at once indicated. (*For Table, see next page.*)

Rheumatic paroxysmal fever, which is associated with much irritation, may be considered the manifestation of the rheumatic diathesis in the various tissues, brought on by the action of cold on parts, so that the condition of healthy nutrition is suspended, and hyperæmia with swelling, or inflammation of a destructive kind begins. The pain is accompanied by numbness, and the redness and swelling are

Blood and Diseases.		Water.	Blood Cor- puscles.	Fibrin.	Albu- men.	Fatty matters.	Salts and ex- tractive.	Density of defi- brinated blood.	Density of the Serum.
Healthy blood according to Becquerel and Rodier	Max.	800.0	152.0	3.5	73.0	3.255	8.	1062.0	1030.0
	Min.	760.0	131.0	1.5	62.0	1.000	5.	1058.	1027.
	Mean	779.0	141.0	2.2	69.4	1.600	6.8	1060.2	1028.0
Rheumatic blood from 14 individuals, and in 43 ana- lyses, accord- ing to Andral and Gavarret	Max.	839.6	130.0	10.2	—	—	—	104.8	—
	Min.	771.6	70.1	2.8	—	—	—	76.9	—
	Mean	805.0	101.0	6.7	—	—	—	86.0	—
Scorbutic blood, from three well- marked cases, according to Mr. Busk	Max.	849.9	47.8	6.5	84.0	—	9.5	150.1	—
	Min.	835.9	72.3	4.5	76.6	—	11.5	164.1	—
	Mean	846.2	60.7	5.9	74.2	—	10.9	153.8	—

often slight in comparison to its degree. A specific anormal change of the blood, and a greater alteration of the nervous force than occurs generally in simple inflammation, sometimes amounting to anæsthesia of the parts, or accompanied at others by greatly increased nervous sensibility, seem to mark the condition and progress of rheumatic inflammation. In one remarkable case of a seaman named John Brickle, aged 25, who had remained for four hours together under water while in the Persian Gulf, the rheumatic symptoms and tenderness of the voluntary muscles were preceded by well-marked peripheral anæsthesia. This patient was cured by an almost daily use of warm bathing, diaphoretics and purgatives, with friction and light flannel bandages to the limbs. The change of air, too, from the Persian Gulf to Bombay, exerted no small influence in improving the general health and removing symptoms of disease.

The irritative fever accompanying local rheumatic affection, sometimes precedes or simultaneously occurs with the symptoms of pain, stiffness and swelling of the joints; sometimes it is ushered in by chills, followed by heat of skin, frequency of pulse, and other pyrexial symptoms. More frequently, however, and particularly in malarious districts, the febrile symptoms are of an obscure hectic kind, presenting no very definite character; being marked, however, by nightly insomnia, aggravation of the pain, restlessness, and slight morning perspirations, which seldom bring much relief from the painful affections of the joints and muscles. The patients, when unrelieved, continue to lose flesh and strength, their muscles become attenuated, and their skins covered by various kinds of eruptions, as mentioned in the previous section. In such cases, particularly those of natives of India, change of air, and relief from the night watches and duties of a soldier, are followed by complete restoration of the persons to health, without any therapeutic means beyond a return to the diet and air of their native villages, with complete exemption from labour and fatigue.

We learn from Dr. Geddes's statistical experience of this disease in

India, that fever existed in less than one-third of his cases; was as common in relapses as in primary attacks; and was not more confined to one local variety of the disease than another. In one half of the patients who had fever, it existed only for a short period, and was, in the remainder, either slight or irregular. According to my own observation, there is generally an apparent disposition in rheumatic fever, like that accompanying exanthematous diseases, to subside after the local appearance of diseased action in the tissues. Though the febrile symptoms and pain will often be found to abate and increase irregularly, without any well-marked degrees of severity between the proportion of the local and the constitutional affection.

III. TREATMENT.

The general therapeutic principles to be followed in attacks of tropical and European rheumatism, are—1. to subdue constitutional irritation and fever by bleeding, narcotics and refrigerants. 2. To eliminate from the system the retained cholæic elements, and other excrementitious matters of the blood, which render the urine acid, and occasion its lithic deposits. 3. To restore the condition of normal nutrition by suitable diet in the stheno-phlogistic kinds; and by iron, cod-liver oil, and tonics, when the rheumatic symptoms are associated with *cachemia*. 4. To subdue local symptoms of swelling and pain by leeching, cupping, and blisters, followed by anodyne applications, or local anesthetics.

In order to fulfil the first indication, which is the principal and leading one, in cases of the stheno-phlogistic kind, much professional discussion and difference of opinion have arisen, regarding the efficacy and propriety of general bleeding, as one of the means. The extent to which this remedy may be usefully employed, will depend much on the youth and naturally plethoric constitution of the patient, the inflammatory character of the local affection, the severity and tonic nature of the accompanying fever, and the purity and bracing influence of the air to which the patient has been habitually exposed. The degrees of fever are found to correspond generally to the coldness and purity of the air in which the patient has lived, the azotised richness of his diet, and the proportionate *hyperinosis* of the blood accompanying good air and rich nourishment. In a general inflammatory diathesis, therefore, the propriety and efficacy of general bleeding are fully established by our own experience, and recommended by a host of unexceptional authorities. But the natural tendency of rheumatic inflammation and fever being to produce anæmia, we must not be too prodigal in wasting the nutritive resources of the constitution; and should be guided in repeating the bleeding, according to the quantity and inflammatory firmness of the blood-clot, and the effect which the first bleeding may have had in subduing irritation and mitigating fever. The same extent of general blood-letting, that might be useful to the temperate and well-fed inhabitants of cold salubrious localities, would be highly injurious to the nervous irritable bodily habits, of those addicted to excessive beer drinking and other dissipated practices. The same quantity of blood, then, abstracted to cure quickly the plethoric mountaineer of Scotland, would endanger the life or render tedious the convalescence of an inhabitant of London, breathing an atmo-

sphere deteriorated by sulphuretted hydrogen. The necessity, too, of general bleeding in tropical rheumatism is rather an exception than the rule, as might be expected from the comparatively mild character of its fever and inflammatory symptoms.

To carry out further this indication, after a moderate bleeding, recourse may be had to ten-grain doses of nitrate of potash, given along with small doses of tartarized antimony and citrate of potash, three or four times a day, in the form of effervescing draughts. Or the nitrate of potash may be combined with nitrous ether and other diuretics; the intention in either case being to subdue heat and irritation, by restoring the normal excretory functions of the skin and kidneys. The utility of nitrate of potash seems dependent on its power of diminishing the plasticity of the blood and suspending the metamorphic disposition of the blood-globules to produce fibrin. Under its use, the specific gravity of the urine is increased, this being a medicine which possesses the power of eliminating urea and other compounds of lithic acid from the system. Such power is probably increased by the combination of nitrate of potash with other alkaline compounds, as the citrate and acetate of potash, which are converted into carbonates in the course of the circulation. All such means, however, prove refrigerant by subduing the heat and irritability of the body; and the effect of such may be greatly increased by the addition, at bed-time, of anodynes, either opium or aconite.

Of medicines best adapted to carry out the second indication, calomel and Dover's powder at bed-time, followed, next morning, by a solution of sulphate of magnesia in compound senna infusion, with the addition of an alkali and colchicum, will be found among the most useful. Much misapprehension regarding the beneficial therapeutic action of the latter medicine seems to exist, some deeming its chief efficacy consists in its power of eliminating urea and uric acid from the system; while others deny to it any efficacy in subduing symptoms of true rheumatism. It is chiefly useful in cases of the acute disease, accompanied by a foul loaded tongue, biliary derangement, and intestinal mucous accumulation. Both my Indian and European experience have convinced me of the fact, that without its purgative effect being induced, the urinary secretion is seldom so much increased in quantity as to bring with it any considerable relief of rheumatic symptoms. The most beneficial mode of administering it in India is to give the wine of colchicum, twice or thrice a day, in a weak solution of tartarised antimony, along with liquor potassæ, and tincture of the hydrochlorate of morphia. Free action of the kidneys and skin is thus kept up, and the feverish frequency of the pulse reduced; but, even in such a case, the use of purgatives, and the elimination of the biliary secretion, must not be neglected or lost sight of. Where diarrhœa, or the purgative effect of colchicum is established, there the amount of urea and uric acid in the urine appears to be diminished; these compounds being eliminated, as would appear by the intestinal evacuations. Dr. Boecker, in a late minute examination of the action of various medicaments, with reference to the changes produced by them in the constituents of the urine, the exhalations of the lungs, and the blood, found that, contrary to the general opinion of pharmacologists, the use of colchicum produced but slight diuretic action,

and had very little effect on the constituent parts of the urine. During its employment, the activity of the skin and lungs, in exhaling carbonic acid, is considerably augmented, and after a time its effect in causing an augmented secretion of bile becomes apparent; the melanotic blood globules, which are unable to combine with the oxygen of the air, being destroyed in the hepatic system, afford materials for an augmented secretion of bile. The result of his analyses, thirteen in number, on the action of colchicum, and its known utility in rheumatism, seem to bear strongly on the truth of the opinions expressed as to the pathological nature of this disease.

The employment of calomel, with a view of obtaining its full purgative effect in cases of the sthenophlogistic variety, should be more steadily pursued to carry out this indication than the plan of giving it with opium, in order to obtain its constitutional effect. From its special action on the biliary organs, it is in Indian rheumatism an invaluable remedy; and in this country too, when properly administered, in aid of colchicum and other purgatives, will be found of much utility, by depurating the blood, through increased biliary secretion, in those hypercarbonised states of the system associated with the disease in many of those cases met with in London. The practice of mercurial fumigation, as successfully used both in this country and in India, proves useful by increasing the elimination from the skin, and restoring the cutaneous functions to a normal state. The same result may be partially secured in both varieties of the disease, by means of warm bathing, warm clothing, and friction of the surface.

The third indication has more immediate relation to cases of the asthenocachexial kind than to those of acute rheumatism. The impaired state of the digestive function being so intimately associated with the origin and progress of the rheumatic constitution, it is of much importance, while carrying out the second indication in acute varieties of the disease, that due attention should be given to the diet of the patient, which must be diluent and of easy assimilation. In the early stage of disease it should consist of gruel, thin arrow-root with milk, or weak broth; and if beef-tea be allowed, it may be given with the addition of twenty or thirty drops of liquor potassæ; the alkali serving to neutralise the lactic and other acids which accumulate in the stomach along with diseased mucous secretions. As phlogistic symptoms, even in the worst examples of acute Indian rheumatism, are associated with much destructive irritation and waste of tissues, a too active or injudicious employment of the diaphoretic and purgative treatment must be avoided, as it will both derange the primary and secondary assimilation. Such derangement is marked by emaciation, loss of strength, pale anasarous visage, and other signs of cachexia; and as the early appearance and rapidity of such symptoms are most remarkable in persons inclining to the leucophlegmatic temperament, the treatment for carrying out the two previous indications should not be such as makes too great a demand on the resources of the constitution. When cachexia appears we must have recourse to bark, sulphate of quinine, preparations of iron or iodide of potassium, all of which operate beneficially on the constitution, by improving the tone of the organs of primary assimilation, modifying the nutrition of the tissues, and increasing the *hæmatin* of the blood. A combination of

these several remedies may be necessary, according to the nature of particular cases; and where iodide of potassium, if given alone, would utterly fail in relieving symptoms, it may be usefully employed in combination with the decoction of bark or sarsaparilla, or extract of taraxacum; by which the double effect of healthy cutaneous action, and increased elimination by the kidneys, may be generally secured. The iodide of potassium must not be given in large quantities, but along with it laxatives are as essential as in using colchicum. In many such cases, the compound decoction of sarsaparilla, to the extent, at least, of half a pint twice daily, with an equal proportion of warm milk, has been found to be of much utility in promoting the nutrition of the tissues, and bringing back healthy cutaneous action. The extract of sarsaparilla in pills, with resin of guaiacum and sulphuret of antimony, may be given advantageously with the same object; care being taken to supply the patient with light easily digested elements of nutrition. Among such elements we may mention cod-liver oil, which in two cases, when prescribed in this country, proved of much benefit. One of these was a case of excruciating pericranitis, affecting the aponeuroses of the cervical vertebræ, and accompanied with neuralgia of the superior maxillary branch of the fifth pair of nerves; the other was hysterical neuralgia of the intercostal muscles. In both cases counter-irritation was employed by means of a liniment of oil of turpentine with pyroligneous acid over the pained parts; and, in the former, the oil was given along with the extract of aconite at bed-time.

The last and fourth indication is to employ remedies suited to subdue the pain and swelling of the local affections. If such are of a muscular kind, strongly stimulating terebinthinate liniments, warm fomentations, and shampooing of the parts, will be found beneficial in relieving pain; but in some cases, such was its severity and persistence, that the patients were relieved by nothing except the abstraction of blood from the parts by means of cupping-glasses. When the joints suffer, and are much pained and swollen, we found no local applications more useful than leeches and repeated blisters to the parts. If the latter be employed, the blistered surface may be dressed with an ointment containing small quantities of the hydrochlorate of morphia, or extract of belladonna. The application also of a wet bandage, saturated with a lotion of camphor mixture, wine of colchicum, and tincture of the hydrochlorate of morphia, covered over by cotton wool and a piece of spongio-piline, to prevent evaporation, will be found of much utility. Others have of late recommended for the same purpose a chloroform lotion, or one of Dutch liquid, stating such to be of great utility in relieving the pain and swelling of the joints; but though we have had no experience of their efficacy, they appear well calculated to fulfil the same intentions as other like remedies which have been long in use. More might be said as to the degree of efficacy of special remedies; but as we place little faith in such, when used without discrimination, we defer their consideration to a more fitting opportunity, the great object of this paper being to delineate the leading characters of rheumatic disease, and the therapeutic indications most applicable to each.

ON THE DIAGNOSIS, PROGNOSIS, AND TREATMENT OF SYPHILITIC ERUPTIONS :

WITH ESPECIAL REFERENCE TO THE USE OF MERCURY.

By THOMAS HUNT, Esq., M.R.C.S.Eng.

DIAGNOSIS OF SYPHILITIC ERUPTIONS.

It is very important to ascertain whether an eruption be syphilitic or not. But this investigation has nothing to do with the distinction between papules and scales, pustules and tubercles; for the poison of syphilis is capable of producing almost every form of eruption. Neither is it wholly a question of colour. The copper-colour, so strikingly characteristic of venereal affections of the skin, is by no means invariably present; nor is every copper-coloured eruption syphilitic in its origin, the hue of the affected portions being materially modified by the natural complexion of the patient. The diagnostic signs of syphilis do not lie on the surface, although the first glance frequently excites well-grounded suspicion. We must appeal to the history rather than to the hue, for evidence of the origin and nature of the disease.

Syphilis is well known to affect the tissues in a certain order; and there is often, but not always, much regularity in the time. Usually, there is first a primary sore, then a swollen absorbent gland, afterwards an eruption of maculæ, followed by an ulcer in the throat affecting the tonsils or velum, or, in other cases, the tongue or lips. The periosteum then becomes inflamed, and a node appears; subsequently the iris is affected; then a secondary eruption on the skin appears, frequently scaly or tubercular, particularly in the palms and soles in the form of lepra, and affecting the genitals and nates in the form of condylomata. At length the cartilages and bones of the nose, face, skull, or other parts, become carious.

When a patient has contracted syphilis originally, and appears before us with a suspicious eruption, we shall generally find upon inquiry, that some or all of the above-mentioned parts have been affected, usually in the order which has been described. When, however, the disease is hereditary, the links of the chain cannot be so clearly traced, and the diagnosis may be difficult. Here, if we can gain any satisfactory knowledge of the health of either parent, it may materially assist our judgment. The eruption should awaken suspicion if it be copper-coloured, and if there be a tendency to ulceration; particularly if the ulcers burrow under the skin, and are partially covered with dull copper-coloured bands of integument. It may likewise be observed, that syphilitic eruptions rarely itch intensely, and as seldom assume a form of active inflammation.

In investigating the nature of venereal eruptions, we may easily be led astray. Various in their form and hue, and not less so in their degrees of severity, they have been described by authors under different names. Hunter wrote of "diseases resembling syphilis": Abernethy wrote of "pseudo-syphilitic diseases": modern writers distinguish between syphilitic and "syphiloid" diseases: Carmichael describes four kinds of syphilitic disease, both primary and secondary; and some of the French surgeons take similar views.

There are, however, many reasons for the belief, that, in this country at least, there is but one syphilitic poison ; and that the mischief which this poison may effect depends, in individual cases, not so much on the intrinsic virulence of the poison itself (for of this we can know nothing), as upon the susceptibility of the patient. Some persons cannot be inoculated with it at all ; in others it produces only a primary sore ; in many it establishes a formidable disease ; and a few are absolutely destroyed by it.

The most perplexing difficulties met with in modern practice, connected with the diagnosis of venereal affections, appear to me to arise from a too hasty adoption of the theory, that *mercury is capable of originating diseases similar in character to the secondary forms of syphilis*. Against this dogma, which, so long as it prevails, must necessarily involve the subject in a labyrinth of difficulties, from which there is no escape, I must beg most earnestly to protest, for these reasons :

I. Symptoms resembling syphilis are never observed to result from the use of mercury in cases in which syphilis has neither been previously contracted, nor inherited. No practice is now more common than the exhibition of mercury for various forms of inflammation affecting many of the organs or tissues. Mercurial treatment has, in fact, to a great extent, taken the place of depletion, and is very frequently pushed to ptyalism ; and yet, to whatever extent the gums, or the salivary glands, or the bowels, become affected, we never find eruptions or ulcerations resembling syphilis, produced by this treatment. The cheeks and the gums, the lips, the throat, and the tongue, may all become the seat of mercurial ulceration ; but the ulcers do not resemble those of syphilis. They are more superficial, less persistent, usually healing when the mercurial irritation subsides ; and they never resemble syphilis in affecting distant parts in a certain order. In these and other respects they bear no resemblance whatever to syphilitic affections ; and when the system is really free from lues, the difference between these mercurial ulcerations and the sores of syphilis, must be as obvious to the most superficial observer, as is the distinction between the *eczema mercuriale* and the *lepra syphilitica*.

II. The morbid effects of mercury are peculiar, and well-defined ; and, with the exception of the ulcerations above described, do not even approach in character any form of syphilis ; neither do they exhibit the slightest similarity to that disease. They are as follows : sore gums, salivation, loosening of the teeth, diarrhœa with griping, dysentery (or green mucous evacuations in children), extreme depression of the nervous system, accompanied with trembling of the limbs, infirmity of purpose, an undefined dread of evil or danger, with pusillanimity of mind, dyspepsia, rheumatism,¹ *eczema mercuriale*, etc.

III. The occasional aggravation of syphilitic disorders, under the administration of mercury, may be rationally explained, and fully accounted for, without supposing it capable of originating a chain of symptoms, the character of which (if not the full development) had been established in the system long before the administration of a grain of mercury. The mode in which mercury, when used in excess,

¹ Rheumatism induced by mercury occasionally throws out nodosities in the neighbourhood of joints, but these are not easily confounded with the venereal node.

aggravates the syphilitic action, will be hereafter explained, without adopting the lame and impotent conclusion, that the remedy is capable of producing a disease similar to that which it cures,—a conclusion which has always appeared to me to resemble more the visionary subtleties of homœopathy, than the sober realities of medical science.

PROGNOSIS OF SYPHILITIC ERUPTIONS.

Syphilitic eruptions, like other forms of lues, generally discover, if left to themselves, a tendency to persist (with occasional intermission) through life; and they may be transmitted from either parent to the children.

In a few cases, a spontaneous recovery appears to take place; and, in many, the eruption will disappear for a time under alterative treatment. But it will now be attempted to show that the spontaneous recoveries from syphilis are apparent only, not real.

There is no disease, the destruction of which it is so important to ascertain with certainty, as syphilis. An error here may not only spread unhappiness and desolation over the prospects of married life; but it may affect the health of the next generation. It is therefore impossible to exaggerate the value of well-considered and well-founded opinions on a subject which has been too much regarded as one of mere theory and speculation. The popular belief on the subject is strong, and calls loudly for attention. So anxious, and so properly anxious, are young men to know if, having once suffered from syphilis, they may safely marry, that there are few cases of monomania more common than *imaginary* lues; and the imaginary disease is far more difficult to cure than the real. One reason of this may be found in the unsettled state of medical opinion and the uncertainty of the prevailing mode of treatment.

The *vis medicatrix naturæ* is observed to relieve the system of certain morbid influences or agents, in one of three ways: by elimination, by decomposition, or by tolerance. Under the two former processes, the disease may possibly be cured; but, under the latter, it is only tolerated, or latent. We have no proof that the act of elimination ever occurs spontaneously, or otherwise, in lues venerea; we do not even observe an abortive effort to expel the poison, as occurs in primary syphilis, gonorrhœa, cholera, diarrhœa, diabetes, etc. Neither is there any reason to believe that the poison is ever spontaneously decomposed or neutralized.

The spontaneous recovery from syphilis, when it does occur, appears to be nothing more than a recovery *by tolerance*, consisting merely in the temporary abeyance of the diseased action, excited by the presence of a poison to which the system has at length become habituated and reconciled for the time. This theory of tolerance is in perfect harmony with all the analogies of natural history, physiology, and pathology. The well-known fact that many mineral and vegetable poisons, such as antimony, mercury, tobacco, and opium, become comparatively harmless by long usage, losing their toxical powers as the system becomes habituated to their influence, would sanction the anticipation that certain *animal* poisons also would become inert from the influence of time and habit: and so in fact we find it. An infected couple, both originally labouring under gonorrhœa, may cohabit until all symptoms

of disease in both of them have vanished. Yet they are both capable of communicating the disease to a stranger. John Hunter relates several cases of this kind, showing that a woman, without any new infection, and without any symptoms of disease on her own person, may communicate gonorrhœa to one man, and not to another; and he was of opinion, that the capability of communicating the disease is sometimes the only criterion of a woman having it herself. The late Mr. Hey, of Leeds, was of opinion that a person may infect another with the lues venerea after all symptoms of the disease have disappeared. And if a doubt may be entertained of the nature of the disease on which these opinions are founded, there is abundant proof in the history of syphilis, of its capability of existing in a latent form, as in the well-known circumstances attending the disease at Lisbon during the Peninsular war. At the time when our troops were stationed in that city, the disease existed among the inhabitants in so mild a form, that no mercury was necessary for its cure; and the dancing girls, from whom our soldiers were infected, were well enough to pursue their avocations on the stage without inconvenience. Yet the disease which they communicated to our officers and men proved to be so terrible a form of syphilis, that it was called the "black lion". It produced phagedenic or gangrenous ulceration of the genitals, and horrible mutilations. It was the opinion of some of the army surgeons, that this was a new disease, or at least a form of syphilis of unusual malignity. It is, however, much more rational to look upon it simply as syphilis, so well tolerated by the inhabitants as to become almost latent, but malign in its effects upon the soldiers from the exhausting influences of fatigue, excesses, and a new and sultry climate. This is quite conformable with the fact, that syphilis generally proves a severe disease upon its first breaking out in a country. In England it is certainly much less formidable than it once was. Less mercury will cure it, and it occasionally wears itself out; but it is syphilis still, and its milder forms are often as treacherous as they are transient. A latent virulence lurks under the mask, which may burst out destructively when least expected. For this power of tolerance has its limits. It is limited to certain persons, to habits of life, to conditions of health, to climate, and sometimes to a generation. Thus, sometimes, syphilis may be almost latent in the parent, but severe in the child. A mother may have no symptoms of syphilis in her own person, but may have a succession of still-born children all poisoned *in utero*, or born alive, covered with maculæ, and falling early victims to the disease. A father, in whom lues has become tolerated and latent, may beget a diseased child, who shall, if weak or scrofulous, suffer more than the father. Spontaneous recovery from syphilis is, therefore, in many cases, perhaps in all, an appearance, not a reality.

TREATMENT OF SYPHILITIC ERUPTIONS.

ALTERATIVE TREATMENT. The alterative cure of secondary syphilis, sanctioned as it is by the practice at some of the London hospitals, is probably of the same nature as the spontaneous recovery. Though the anti-syphilitic virtues of Plummer's pill, sarsaparilla, guaiacum, iodine, arsenic, and the mineral acids, are very questionable, these medicines evidently have the power of rendering certain subjects

tolerant for a time at least, of certain forms of secondary syphilis. These agents will bring about the healing of ulcers, the dissipation of eruptions, and the reduction of periosteal swellings; and under this treatment, combined with a regulated diet, scores of patients, perhaps hundreds, are annually dismissed from our hospitals, apparently free from every vestige of disease. The Plummer's pill, although it contains calomel, does not appear to act mercurially, the sulphuret of antimony modifying its action. Indeed, the specific effects of mercury are not apparent; this treatment, therefore, is non-mercurial, and yet patients appear to recover under it. But do they really recover? Do they not frequently return again and again to the same hospital, or to some other hospital, and when again discharged, apparently cured, does it not frequently happen that the first exposure to the effects of intemperance, want, or cold, induces a relapse of the disease? Or, if it be tolerated for life, so that it does not re-appear in the person of the patient, is the wife safe; or, more especially, are the children of the patient safe? The question admits of great doubt. A large proportion of the cutaneous diseases met with in every station in life, are syphilitic. That a man can, without infecting his wife, transmit to his children a syphilitic taint, is an established doctrine. Several cases of this nature are related by the older writers on surgery, and by some of modern date. Several, also, the validity of which no scrutiny can impeach, have occurred in my practice. I have seen syphilis in infants and in children of all ages, whose fathers had married after the non-mercurial treatment of the disease had effected an apparent cure. After marriage (in some cases several years after), secondary eruptions made their appearance. These were treated mercurially, and the result was most instructive. The wife escaped, as did also the children begotten *after* the mercurial treatment of the father; but the children begotten *before* the mercurial treatment were infected. In one instance, the child suffered more than the father. The father had psoriasis plantaris in a mild form; the child, a girl of ten years of age, had iritis, sores about the nostrils, and a scaly eruption on the scalp. All these diseases, together with that of the father, yielded to active mercurial treatment, and to no other; iodine, sarsaparilla, and other remedies of that class, having proved perfectly inert. Several children, begotten and born after the mercurial treatment of the father, were perfectly healthy, nor was any trace of disease to be found in the mother. In another striking instance, a married man contracted syphilis. The primary sore readily healed under simple treatment. Secondary symptoms appeared, which ultimately yielded to active mercurial treatment. In the interval between the healing of the primary sore, and the subsequent mercurial treatment, a female child was begotten. This child was born apparently healthy, but, as she grew up towards womanhood, suffered from sore throat, scaly eruptions, sores about the nose, and other unequivocal symptoms of syphilis. Subsequently to the mercurial treatment of the father, several children were begotten, but not one of these has been affected. And two elder children, born before the father contracted syphilis, have been also entirely free from the disease, together with the mother, who was fortunate enough to escape infection in the first instance.

Nothing is more common than for middle-aged men and women who are afflicted with secondary syphilis, to deny that they were ever affected with a primary sore; sometimes admitting that they have deserved to contract the disease, but denying that such has actually occurred. Assuming that some of them report falsely, common sense claims a certain proportion of these cases as cases of hereditary syphilis, breaking out for the first time in middle age in the form of secondary symptoms.

In the instances which have fallen under my notice, I have generally found alterative treatment useless, and mercury all-sufficient; and the conviction has been more and more forced upon my mind, that the non-mercurial treatment of secondary syphilis may be generally regarded as an inefficient and ineligible practice; inefficient as regards the patient, and ineligible as tending to infect large masses of the community with hereditary syphilis. The disease may be, and often is, mild in its hereditary forms, and it may possibly wear itself out in a generation or two; but this by no means always happens. It aggravates the strumous habit when it happens to come in fellowship with it; and probably is at the foundation of many cutaneous and cachectic disorders, the character of which is undefined and unsuspected. One cannot, therefore, but deprecate a practice which allows the blood to remain vitiated and tainted, from generation to generation, with the presence of an animal poison, which we have, in most cases, the power of destroying at once and for ever.

MERCURIAL TREATMENT. The prevailing objections to the use of mercury in syphilitic diseases may be thus summed up: 1, That it occasionally produces lesions more formidable than the disease for which it is prescribed; 2, That its use is not generally necessary to their cure; 3, That besides being unnecessary and injurious, it often proves inefficient and inert.

That there is much of real truth in these objections, no practical man can deny; but there is likewise much fallacy. For as these diseases, in their secondary forms at least, rarely get soundly and permanently well without mercury, it may be said to be generally necessary to their cure. And if rightly and vigilantly administered, it is generally successful. But both its safety and its success will be found to depend very much on its *mode of administration*, by which term is intended to signify something more than its *mode of introduction* into the system; for this, except in peculiar cases, appears to be of little consequence.

Our success in administering mercury may be very much limited by erroneous views of its mode of action. The mineral and the disease have been regarded as two antagonising poisons; the poisonous influence of the mineral counteracting that of the disorder, by setting up in the system a morbid action of a different kind, and incompatible with it. On this theory it would appear that the more disastrous the effects of the medicine, short of the actual destruction of life, the more perfect would be the safety of the patient. The more he is poisoned by the mineral, the less would he be poisoned with lues. And in the event of the disease becoming aggravated by the severity of the mercurial course, it would be necessary for the truth of the theory, to hold, that the original disease having been vanquished by so much

mercury, the existing symptoms must be the symptoms of a *mercurial disease*.

The true theory is probably the very reverse of this. It is very doubtful whether any real advantage is derived, in any case, from the morbid effects of drugs. Disease may succumb in spite of such influence, but not in consequence of it. If a poisonous drug is allowed to do mischief, it has probably been given in excess. A smaller quantity would have accomplished our therapeutical purposes, not only as well, but probably more efficiently. It is in the right dose of a medicine that its real value consists; and too much study cannot be given to this all-important point. As a general rule, the doses in which we are accustomed to exhibit poisonous remedies, are perhaps not only large, but injuriously excessive.

Mercury belongs to the class of mineral tonics, which, in excessive doses, become irritants, and, in large doses, poisons. Its tonic action ceases when irritation is excited in the tissues. In order to avail ourselves of the full benefit of tonics, our attention must constantly be directed to their special properties and peculiarities of action. There is in the organic system an inherent tendency to health. Disease is an accident; a breach in the economy, which nature is ever intent on repairing. But in this she sometimes fails; and the design of tonics is to supply what is wanting. There is sometimes a deficiency of pure healthy blood; and the preparations of iron restore that fluid to a healthy condition. In other cases, the blood contains an amount of poison; and some tonic must be selected which is capable either of eliminating or decomposing the poison. Mercury probably acts by producing some chemical change in the blood, which renders the poison inert for a time, and, under careful management, for life. But as the salts of iron are liable to create disturbance in the functions, if given in excessive doses, under which circumstances their tonic effects cease, so mercury must be so administered as not to depress the powers of the system, which are required for the destruction of existing disease. So long as the general system does not suffer from the mercurial poison, it will remain capable of taking advantage of the special effects of the mineral as exerted on the morbid condition of the blood. But when the gums become sore, or the bowels disturbed, there is here a new source of irritation and debility. The animal poison may have been in part neutralised; but, if the strength of the system be sacrificed to the action of the mineral poison, it will no longer be able to contend with the original disease, which, although less virulent in its nature, may become more destructive in its effects. It often happens, that syphilitic symptoms will yield under a course of mercury up to a certain point; the disease will then become stationary, and, if the medicine is persevered in, the symptoms will become aggravated. Sores which were healing will again ulcerate, dissipated eruptions will re-appear, and the patient may even fall into a worse condition than before. And yet the disease is as purely syphilitic as ever it was, and as ready to yield to mercury, if rightly administered; but the system being for a time deranged by its excessive administration, the *vis medicatrix nature* is paralysed, and the disease is triumphant.

But, apart from theory, the case is practically this. Mercury gene-

rally excites a salutary influence over syphilitic eruptions; but only for a time. It then does harm. Whatever be the reason of this, the practical conclusion is plain. We must then desist; and, if necessary, renew the treatment when the system has recovered from the shock. It is much safer to administer an active remedy, under the guidance of the observable phenomena of its action, which present themselves to our notice, than in obedience to any theory deduced from extraneous sources. That the latter method has been prevalent, both in the excessive, and in the too sparing, use of mercury, is but too apparent.

Every mineral used in medicine has some peculiarity of action, which can only be understood by long and attentive observation; and without a familiarity with these habitudes, we use the medicine at great disadvantage. Too much attention cannot be given to this subject. In order to show its important bearing, the action of mercury may be contrasted with that of arsenic. Thus:

ARSENIC

Produces its maximum of good by slow degrees, and by continued and prolonged exhibition.

Has a cumulative action, the system becoming more and more sensitive to its presence, and intolerant of its influence, in proportion to the quantity swallowed.

May be given until the patient will not bear the five hundredth part of a grain.

Affects the nervous system more readily at first, and afterwards the vascular system, the nervous tissues recovering their tone.

Should therefore be added to the blood drop by drop, *cautè et gradatim*, in diminishing doses.

MERCURY

Effects its salutary purposes often suddenly; always within a limited period; or, beyond that period, fails altogether.

Has no cumulative effects after the first few days; and the system becomes less and less sensible of its presence, and more tolerant of its influence, by its habitual use.

May be given until enormous quantities prove absolutely inert.

Affects the vascular system more readily at first, the nervous system suffering severely after a lengthened course.

Should be poured in suddenly, until it produces some effect, then as suddenly withheld for a time, and resumed, if necessary, with greater energy.

That the vascular system may be gradually inured to the influence of mercury, so that doses which at first had the power of salivating, may at length be administered without producing any sensible effect; and that, in order to excite as ready an action by a second or third course of mercury, as by the first, the dose must be increased, if not doubled, must be well known to every practitioner. It is also matter of common observation, that the salutary action of mercury on diseased structure, is nearly contemporaneous with the morbid action of the mineral on the gums or other tissues. Accordingly, the common practice has been, not only to make the gums sore, but to keep them sore for days or weeks together, with a view to the continued and protracted effects of the remedy on the disease. As it was once believed that copious ptyalism was necessary to insure the full benefit of the mercurial treatment, so of late it has been generally held, that a continued, though moderate, degree of soreness of the gums is a necessary condition. This opinion appears, however, to rest upon no better foundation than the former now long exploded notion.

Both the one practice and the other appear to be founded on the belief, that the morbid action of the mineral on the healthy tissues, takes precedence of its salutary action on the diseased structure.

Many years' close and anxious observation have established in my mind the opinion, that this is an erroneous view. It is not easy to detect, in an ulcer or an eruption, the first appearances of healthy action; and it is clear that healthy action must exist for some little time before it becomes apparent. If, therefore, the gums first become tender, and the ulcer first presents an improved appearance, on one and the same day, it is fair to presume that the healthy action had been actually set up on the previous day, that is, antecedently to the morbid action on the gums. But further, close observation will generally reveal the fact, that the very appearance of improvement in the diseased parts exists before the gums are in any degree affected. The mercury has effected the good before it has effected the evil. The soreness of the gums, therefore, is a sign, not merely that the mercury has been pushed far enough, but that it has been pushed *farther than was necessary* for the establishment of healthy action in the diseased parts. If a drachm of strong mercurial ointment has been used every night for five successive nights, and if, on the following day, healthy action is substituted for diseased; and if, on the sixth night, the inunction is continued, the gums becoming slightly sore on the following day,—in such a case as this, the mercury has been continued two nights longer than necessary: for the healthy action, which became apparent after the fifth night, must have existed the day before, though unobserved; consequently disease had been actually arrested by the fourth inunction; and the healthy action thus set up, would doubtless have continued, for a time at least, if the mercury had been omitted on the fifth and following nights. The injury inflicted on the gums, therefore, was wholly unnecessary to the immediate restoration of health. The effect has been sudden, and probably instantaneous,—but will it be lasting? Probably not; and the practical question is: Would the effect have been rendered, in any degree, more permanent or satisfactory, by persevering in the mercury? It is now pretty well agreed, that no advantage would have resulted from salivation; for sores which had become healthy at the commencement of a mercurial course, have been but too frequently observed to retrograde under a protracted pytalism. And the same thing has been observed under a mild but long-continued course, affecting the gums but slightly.

Under the mercurial irritation in any and every degree (whether from the consequent exhaustion of the *vis vitæ*, or from whatsoever cause), the latent virus, if any exists in the system, is liable to break out in an aggravated and destructive form. It is, therefore, not only useless, but in some degree dangerous, to persist in the use of mercury for a single day beyond the date of a visible improvement in the disease. It is, however, often necessary to have recourse to a second course, or even a third or a fourth, in order to effect the final destruction of the disease. Each succeeding course must be more energetic than its predecessor; otherwise little or no effect will be produced. The courses should also be short and distinct, and should be so managed as to arrest disease without disturbing the general health. The case should be watched *day by day*, and an improvement in the disease, ever so slight, be it real and satisfactory, should be regarded as the signal for arresting the course. Then aperients and tonics should be substituted for the mercury; and the very first appearance

of a return of the disease indicates the necessity of a renewed administration of mercury in doses twice as large as the first. By this means disease may often be arrested in an incredibly short time; and when the system is again purged from the mercury, a third course may be administered as a preventive, suspending the mineral as soon as fetor is observable in the breath, or a bitter metallic taste complained of by the patient.

The whole of this practice, which has proved very generally successful, is founded upon the fact, that the action of mercury on the disease is sudden, and of short duration. It is that of a shock; and the impulse appears to be expended upon the organic nerves. In what way such an action on these nerves can permanently destroy a blood disease, it may not be easy to explain:¹ but that the final results are not compromised by the limited duration of the mercurial action is quite certain. Indeed, the radical cure of the disease never proves so difficult as where mercury has been administered in large doses for many consecutive months. The debility thus produced too often renders the system a helpless victim to the disease. Whereas, by short and vigorous courses, the vital powers are roused and invigorated, the appetite is increased, the digestive organs become active, sleep is procured, and the disease appears to yield rather to the *vis medicatrix naturæ* than to any specific anti-syphilitic virtues inherent in the mineral.

These views may appear opposed to the experience of many practical men, who, failing to effect a radical cure of syphilis by a short course of mercury, have seen the disease annihilated at length by a persevering use of the remedy for many weeks together, to the severe injury of the gums. Such cases occurred in large numbers in the early part of my practice; and it was once my opinion, that the benefit was due to the unremitting use of mercury. More recent experience, however, has made it evident, that the disease would have yielded quite as fully to a shorter course, and that the benefit derived from the continuous use of mercury, was all due to the shock produced at the commencement of the course.

A very powerful, yet incidental, illustration of the principles above enumerated, has been furnished by a recent publication from the pen of Mr. Langston Parker. This gentleman has found that by a process of fumigation, the beneficial effects of mercury may be secured with more certainty and less inconvenience than by the usual methods. The advantage is evidently derived from the rapidity of absorption and consequent suddenness of effect. Mr. Parker's practice must, of course, be limited by its attendant inconveniences; but the principle is capable of almost universal appliance. We have had long experience of its value in the use of mercurial inhalation. The fumes of the oxides of mercury received into the fauces have been found to produce the specific effects of the medicine when the system has been proof against inunction. But it is easy to apply the principle to any

¹ The rapidity with which diseased action is exchanged for healthy, under the influence of mercury, reminds one of the chemical changes produced by galvanism. We know little as yet of animal chemistry; but if we look at the action of mercury as electro-magnetic we shall be able to account for many otherwise obscure phenomena.

mode of introducing mercury into the system, which it may be found convenient to adopt.

It will be most needful, however, to be aware of the possibility of severely salivating the patient by an unguarded exhibition of a very few energetic doses. This danger will occur to the mind of every prudent practitioner, and will deter many from adopting the method of treatment above described. But the danger need only be foreseen to be avoided. We must make it our special business, before commencing the therapeutic course of mercury, to administer an experimental course, just to ascertain exactly the degree of mercurial susceptibility inherent in the constitution of the patient. This may be done in the most guarded way; and, if the patient is unusually susceptible, this first trial may prove therapeutical. If not, it will serve to indicate the dose which the patient will bear with impunity.

Neither must it be forgotten, that we now and then meet with a subject wholly and incorrigibly intolerant of mercury; and, even if we can coax the vascular system to bear it, we irritate the nervous tissues beyond endurance. These cases are rare exceptions to a very general rule. Strumous subjects also are apt to bear mercury ill; but by combining the mineral with the preparations of iron, and giving the patient the advantage of the coast, the open air, and a mild season, the difficulty is often overcome, especial caution being requisite lest the gums or glands should suffer irritation. When pulmonary tubercles are discoverable, even in a latent form, mercury is to be avoided. Nothing is so likely to promote their development and maturation as a mercurial course. When syphilis and phthisis co-exist, the case is hopeless.

Much importance is attached by some practitioners to the selection of the medicinal preparations of mercury; some giving the preference to one form or mode of introduction, others to another. Without depreciating the real value of these preferences, it may be questioned whether any general rule can be laid down. Every preparation has its objections as well as its advantages; but both the one and the other are casual, not inherent. The chloride is active and energetic, and invaluable in cases of iritis, where there is no time to be lost; but it is apt to create undue irritation in the bowels. Inunction is a safe and, generally, a sure mode of introduction. But it is a dirty and inconvenient practice; and now and then we meet with cases in which the absorbents of the skin refuse to perform their office: neither can we in any case ascertain how much mercury is actually absorbed. The blue pill is a mild and convenient form for the first course; yet it is liable to remain unchanged and inert in the bowels, or, on the other hand, to be converted into the chloride or bichloride. The latter preparation is often active and useful, but it fails in safe doses to create the salutary shock so necessary to the full effect of mercury on the system. Fumigation, either general or local, presents perhaps more advantages, when it can be conveniently had recourse to, than any other mode,—but it is a difficult and delicate question, how to regulate the dose. It is my usual practice to begin the course with two or three grains of blue pill every night for three nights, by way of experiment. If this produces no effect, an aperient is administered, and after it, five or seven grains of blue pill night and morning, until its salutary

effect becomes visible. In the second course, the dose is increased; in the third, inunction is preferred; in the fourth, inunction, together with frequent doses of calomel, with or without opium. In strumous cases, the bichloride, combined with the compound tincture of cinchona for adults, and the grey powder for children, with some preparation of iron, have been found most useful.

In all cases, regard must be had, not only to the original constitution of the patient, but to his present condition. Both plethora and anæmia are conditions highly unfavourable to the advantageous exhibition of mercury. In the former case, depletion must precede the mercurial course: in the latter, the preparations of iron may be combined with mercury, or otherwise administered.

26, Bedford Square, January 1851.

ON INTERNAL STRANGULATION OF THE INTESTINES.

By HENRY HANCOCK, Esq., Fellow of the Royal College of Surgeons of England: Surgeon to Charing Cross Hospital.

(Read before the Medical Society of London, January 4, 1851.)

CASES of Internal Strangulation of the Intestines are so obscure, so difficult of diagnosis, and so fatal; their *post-mortem* examination so frequently develops the probability of relief from early operation, whilst our knowledge upon the subject is so very defective, that great benefit would ensue if all cases occurring in the practice of individuals were recorded, and therefore I am induced to submit the following cases to the attention of the Society; for although they terminated fatally, they may, as collateral evidence, strengthen the hands of the surgeon, and justify him in proceeding to operation earlier than has hitherto obtained.

CASE I. I was, on Sunday the 3rd of November last, requested by my friends, Messrs. Brown of Lewisham, to see the gardener of a gentleman residing at that place. I am indebted to them for the following particulars.

E. P., married, æt. 51, an under-gardener, who had resided in his situation for twenty-three years, about five feet six inches in height, of stout proportions, of active and temperate habits and healthy, except having had inguinal hernia on the right side, for which he had constantly worn a truss for ten years; was on the 17th October, 1850, assisting in raising a tree which had been blown down, and using great exertion, suddenly felt a sharp pain across his abdomen, which almost caused him to faint. He went home, and took some hot brandy and water; the pain subsided in about two hours, and he resumed his usual employment, and thought nothing more of the pain or the circumstance of straining himself. On Wednesday, October 30, thirteen days after the strain, he complained of a slight pain in the stomach, which he attributed to his bowels not having been sufficiently opened for two days, for although on the day previously he had had several evacuations after taking some pills, he felt unrelieved, and complained of pain across the umbilicus. He was ordered eight grains of Dover's powder, with three

grains of calomel, and a strong purgative mixture. On the 31st, the pain in his abdomen was gone, but his bowels had not been acted upon. Calomel grs. iij, scammon. gr. x; to continue the purgative mixture.

Nov. 1. Being considered better, was not seen, but at night sent for more medicine, as his bowels had not been opened. Cal. gr. v, scammon. gr. x, in castor oil, mist. sennæ c. ʒij, 4tis hor.

Nov. 2. Has passed a very bad night and vomited many times. He for the first time mentioned the pain he suffered when replacing the tree, but thought that had nothing to do with his present illness. His abdomen distended, and in great general pain. No tenderness or increase of pain on pressure; no hernia on the right or left side to be seen, felt, or detected; distressing pain about the umbilicus; vomiting almost constant, apparently pure bile; countenance dejected; skin yellow; pulse 126; tongue clean and red; in a profuse perspiration; respiration 21. Introduced a long tube into the rectum and injected about a pint and a half of gruel, with castor oil and salt; it came away immediately with considerable force, and accompanied with a few bits of hardened fæces; two more injections were given at intervals with the same results; to take cal. gr. v, pulv. opii gr. ʒ, every two hours, castor oil, with two drops of croton oil, and the compound senna mixture; the bowels to be kept constantly fomented with the poppy fomentation and flannel, and the abdomen to be carefully rubbed. 1 P.M. Remedies continued; vomiting urgent; countenance very distressed; eye sunken; complains of great pain all over the abdomen, but could not make him point out any particular spot; sickness very distressing; skin jaundiced; pulse 130; tongue clean; urine of good colour, passes freely. 5 P.M. Symptoms aggravated; tongue dry; administered another enema, with the same result; ordered brandy and soda-water. 10 P.M. Continues in the same fearful state; has passed a few pieces of hardened fæces, but no wind; the distension of the abdomen has increased, but not the pain.

Nov. 3, 9 A.M. Has passed a most wretched night, until early this morning, when the vomiting ceased for six hours, during which interval he had some sleep; the vomiting, however, returned occasionally. His abdomen much distended, but not in pain; countenance collapsed; thirst great; pulse 136; very feeble; tongue clean; extremities cold; appears sinking fast. 1½ P.M. Continues to get worse. He was seen and examined by Mr. Hancock.

I found the patient in the condition which has been so ably described by Mr. Brown, and after a careful examination could not detect any signs of hernia, either on the right or left side. The patient told me he had worn a truss on the right side for the last ten or fifteen years; but said he was sure the hernia had nothing to do with his present sufferings, as it had not been down, and he experienced no pain in that situation, either during my examination or at other times, whilst he complained greatly of the pain above the umbilicus; indeed he appears to have suffered so little inconvenience from the rupture, that his wife, to whom he had been married twelve months, was not aware of its existence, as she told me that, although she saw the truss, she did not know why he wore it, and that he never complained of anything being the matter with him.

It was evident that the poor fellow was dying, whilst the symptoms and previous history led us to the conclusion that an internal strangulation existed, of some kind or other; but what its precise nature was, whether intussusception, band, or otherwise, or its exact situation, we could not decide with any degree of certainty. However, it was agreed, as presenting the only chance of saving him, that an exploring operation should be performed, and his consent having been freely given, it was proceeded with, with as little delay as possible; but before selecting the spot for operation, a very careful examination of the whole abdomen was made. Not the least external appearance of hernia was to be discovered; the whole abdomen was distended, but not very painful to the touch in any part; but about three inches above Poupart's ligament, on the right side, Mr. Brown directed my attention to a spot at which an elastic and firm feeling was communicated to the finger, and on consultation it was decided to operate at that point. I therefore carried an incision, beginning rather more than an inch above the anterior superior spinous process of the ilium, continuing it towards the linea alba. The abdominal layers were carefully divided in the same direction; and upon coming down to the fascia transversalis, it appeared to bulge at the spot mentioned, and when this was divided, a bulging of the peritoneum the size of a walnut was discovered; this was laid open, and a knuckle of congested intestine disclosed. I sought the seat of stricture, but it was so high up I could not reach it until I drew the intestine gently down for about two inches, when Mr. Brown detained it in that situation, and I was enabled to divide the stricture, which was so firm that we could all distinctly hear its division by the knife. The wound was then brought together, and same brandy and water and opium given to the patient, who, however, died very shortly after the operation.

I was not present at the post-mortem examination, which took place twenty-four hours after death; but I am indebted to Mr. Brown for the following particulars. The intestines contained a considerable quantity of fluid, and were so distended that it was thought necessary to puncture them, and more than three quarts of fluid poured out. The intestines were neither inflamed nor congested, excepting for about four inches, which had been constricted, and which was congested. The constricting band had been completely divided, and no other adhesion or band could be discovered in the course of the intestines, which were perfectly free.

CASE II. The next case was that of a gardener to a gentleman residing at Hampstead, to whom I was called by Mr. Willin. He had been wheeling some heavy barrows of turf, and whilst warm drank a pint of ale rather quickly, immediately upon which he was seized with severe cramping pains in the abdomen. He subsequently presented the same symptoms as in the last case. Obstinate constipation, continued vomiting, swelling of the abdomen, and pain referred principally to the umbilicus. The abdomen, though swollen, was not very hard, neither was the pain much increased upon pressure, excepting in one spot over the right iliac fossa. When I saw him, the symptoms were for the time alleviated by calomel and opium; his pulse were better; abdomen softer, and free from pain; countenance

less anxious; and the patient expressed his opinion that he would get well: it was agreed, therefore, to continue the same treatment, unless he became worse, when an operation was to be proposed to him. In accordance with this, on the following day, his symptoms being much aggravated, Mr. Willing suggested an operation, and sent for me to see the patient again; but, in the meantime, he found that the man resolutely refused to submit, whilst the friends locked the garden-gate, and declared they would not admit either of his doctors within the premises. Under these circumstances, nothing could be done; the man lived three days, and then died exhausted. We obtained permission to examine the body, and found the cause of mischief to exist in the right iliac fossa. The appendix vermiformis was turned up, and through the ring thus formed a portion of the ilium had protruded; and I was enabled to withdraw it without the slightest difficulty, as, although the constriction had been sufficient to prevent the passage of the contents of the intestine, it had not been sufficient to produce strangulation, or even inflammation, of which there was no trace.

The anxiety connected with cases of this description is greatly enhanced by the uncertainty attending the exact seat of obstruction, from whatever cause it may ensue; the symptoms are frequently so deceitful, the history so meagre, and unsatisfactory, that we have but little to guide us in the selection of locality. It has been stated that a pretty correct opinion may be formed as to the point of mischief, by the constant pain referred to that spot; but this theory is opposed by the first case related, as here the pain was confined to the umbilicus and pit of the stomach, whilst the patient denied its existence over or near to the actual seat of constriction, over which he could bear considerable pressure without suffering; and, indeed, it was only the particular feeling referred to the touch, upon pretty full pressure, that led us to perform the operation where we did. It might fairly be asked, did not the previous existence of hernia give you some clue to the nature of the mischief, and would not that serve as a guide? It might in some instances; but attention was paid particularly to this point. Not the slightest external swelling or projection at the rings could be detected; whilst the man denied that it had been down, and actually scouted the idea of his sufferings being in any way connected with it: and what still more strongly marks the slight dependence to be placed upon the pre-existence of hernia as a guide is, that I was once present at an operation for the relief of internal strangulation; the patient, a woman, had suffered from femoral rupture of the right side for some years, and it was thought that the then existing symptoms might in some measure be connected with it. However, the evidence was so unsatisfactory, that the surgeon determined upon opening the abdomen at the linea alba; it was then discovered that the hernia had nothing at all to do with the matter, but that the obstruction existed on the other side of the abdomen.

Again, the symptoms are so undecided as often to mislead, or, at all events, to increase doubts as to the nature of the mischief. It is an interesting and important fact, that in these cases the constriction shall be sufficient so to interfere with the functions of the part, as sooner or later to destroy life, without at the same time producing any appreciable degree of inflammation; this was the case in both the

examples here related, and this accounts for the fact that, although in both instances the abdomen was distended, it was not hard; it could bear pressure; and in both the patients could lie with their legs straight down in bed. Again, the first case proves that we have not always the entire and complete arrest of the passage of the *fæces* to guide us in our diagnosis, as we find the bowels acted more or less for thirteen days from the occurrence of the strain; and I may here observe, that the passage of *fæces* must not always be looked upon as an unerring sign of complete freedom from constriction, even in strangulated hernia. A woman was brought into Charing Cross Hospital, having had strangulated femoral hernia of the right side, which had been returned after long-continued pressure by a very intelligent practitioner in the neighbourhood; the constitutional symptoms, however, were unrelieved. I saw her the next morning, and determined that should she not be better in the evening, I would perform an exploring operation, as, upon careful examination, the hernia appeared to have been completely returned; upon visiting her at eight o'clock in the evening, for that purpose, I found her improved, and was told that her bowels had been twice moved, and therefore I concluded all would go on satisfactorily; her bowels were again slightly moved on the following day, but, as she complained of some little uneasiness, a dose of castor oil was ordered. She became rapidly worse, and died from general symptoms of peritonitis in the course of a few hours. The post mortem shewed that the hernia, which was very small, had been returned "*en masse*", but that the sac did not contain the whole calibre of the intestine, but only a portion of its side.

REMARKS. Notwithstanding the fatal termination of these cases, I have ventured to bring them before the notice of the Society, in the hope that they may be of service in directing attention to the propriety of interfering surgically at a more early period than what usually obtains, and of abstaining from the indiscriminate employment of purgative medicines, which had better be discontinued when sickness sets in, as they materially increase the patient's sufferings, diminish his strength, and lessen the probability of the operation proving successful. And I would again venture to advert to the fact, that patients in these internal constrictions are frequently destroyed by irritation and impeded function, and not by inflammation; that consequently the symptoms are more negative than positive: positive, for the most part, as regards sickness, constipation, and prostration; but negative as regards the swelling, and character of swelling, of the abdomen; the pain; and condition of the pulse, until at an advanced period. And, indeed, from the various cases which I have seen, but which the limits of this paper will not permit me to enter fully upon, I am inclined to believe that, in cases of constriction within the abdomen, the symptoms are seldom so acute and decided as either in strangulated hernia, enteritis peritonitis, or typhlo-enteritis.

In conclusion, I would remark that I have here merely intended to submit the account of two cases, with a few remarks; but that I by no means offer this paper to the Society as an essay upon the subject of Internal Strangulation.

59, Harley-street, 31st Jan. 1851.

BIBLIOGRAPHICAL RECORD.

WORKS ENUMERATED at p. 44.

INTRODUCTORY ADDRESS ON MEDICAL EDUCATION, WITH ESPECIAL REFERENCE TO THE COURSE OF STUDY REQUIRED FOR THE DEGREE OF M.D. IN THE QUEEN'S UNIVERSITY, IRELAND. By ALEXANDER FLEMING, M.D. pp. 32. Dublin : 1850.

IN treating the subject of MEDICAL ETHICS on a former occasion, we stated our conviction, that all useful reform in our profession must result from the united efforts of its members. We also expressed an opinion, that a great proportion of the evils which afflict us are directly traceable to the want of preliminary education ; which deficiency we regard as the fertile source of those multiform shapes of quackery which produce disunion among ourselves, and make us objects of contempt to the public. We stated, at large, our views as to the amount of general information which ought to be possessed by those who propose to enter upon the study of medicine ; and we intend, on the present occasion, to enter more particularly into the duties which belong to the student, *after he has acquired a due amount of general knowledge*, and when he is fairly launched upon his professional career. We are in hopes that our observations may be not altogether ineffective in awakening the attention of the profession to the improvement of the education of their juniors ; on these latter must the hopes of the profession rest, and by their success, or failure in acquiring sound principles of thought and action, must the future welfare of our common calling be determined.

However much we may have advocated the necessity of classical studies, and other branches of general knowledge in the education of youth destined for the medical profession, we by no means recommend that the student should combine Latin, Greek, and Mathematics, with his purely medical and anatomical studies ; nor do we for one moment defend the present miserable system of a young man wasting his time in superficially learning the Latin grammar at a period when he should be attending to his studies in the hospital or the dissecting-room. We strongly maintain that the former should be mastered *before* the pupil enters upon his strictly medical pursuits. If a boy, who has been under competent tuition from the age of ten to sixteen, has not been able to acquire a competent knowledge of Latin, and of the rules of arithmetic, together with the outlines of history, geography, and logic, he is certainly unfitted for a profession requiring so much mental energy, and such varied acquirements, as the medical ; and if it be ascertained that, from unavoidable circumstances, his education has been neglected up to the period we have mentioned, it would surely be advisable for his friends to put him under tuition for at least another year, before making him enter upon the actual studies of his intended profession. The year, devoted in this manner to preliminary studies, would promote, rather than retard, his real advancement, and might afterwards save considerable trouble, vexation, and expense.

The plans adopted by those who are intended for the medical profession are threefold :—1st. The student is sent to one of the universities, either that of London, Oxford, or Cambridge ; in all these some form of preliminary education is enforced by means of examinations. At Oxford the student must take the degree of Bachelor of Arts ; at Cambridge he must pass the Previous Examination ; at London he must pass the Matriculation, which, as we have stated in other articles, is a comprehensive and efficient test of general literary and scientific acquirements. In all these universities, these examinations must be passed *before* the student commences his medical studies ; but the University of London differs from the other universities in

not requiring residence for its degrees, and also in allowing the examinations to be passed at an earlier age than is permitted at the other seats of learning. This plan is adopted by those who aspire to the highest ranks of the profession.

2nd. The student is placed for two or three years with a practitioner, to learn the rudiments of his profession, before beginning to attend lectures and hospital practice. This system is called apprenticeship, from the French word *apprendre*, to learn; and, in the indenture, the master enters into a covenant to instruct his pupil, *or to cause him to be instructed*. We need hardly inform our readers that, although by the Act of Parliament it is required that the apprentice should remain with his instructor *five years*, it is practically necessary that he should serve only two; and, indeed, he need not actually serve him at all; for if his master is unable, or unwilling to instruct him, and allows him to obtain his information from other sources, both the letter and the spirit of the Act are maintained. This second plan is very generally adopted by those who are to become general or family practitioners.

3rd. The pupil is sent, at the age of eighteen or nineteen, with little or no preliminary education at all, to one of the great cities of London, Edinburgh, or Glasgow; he is placed under no control, is subjected to no previous examination, and is left pretty much to follow his own inclinations as to the method of pursuing his studies. This system qualifies a pupil to present himself as a candidate for the diploma of the Royal College of Surgeons of England, or for the degree of Doctor of Medicine at one of the Scotch universities. We are very far from asserting that all those who belong to any of those learned bodies are destitute of a knowledge of general literature and science, but it is a notorious fact, that no *evidence* of preliminary knowledge is *required* at any of these institutions. We should also qualify our statement by admitting, that the English College of Surgeons requires an extensive array of general knowledge from its *Fellows*; but as these form, and are likely for a long time to form, only a very small fraction of the profession, our remarks are not practically invalidated.

Of these different methods of professional education, the first is incomparably the best; though it must be granted, that the two latter have been followed, in early life, by some of our most eminent practical physicians. The evidence of preliminary knowledge, which the student is required to give, insures a certain amount of previous mental training, and proves his capability of grasping the difficult subjects which will afterwards be presented to his attention; while the progress of his subsequent studies is ascertained, at different intervals, by oral and written examinations. Those who pass successfully through these ordeals are justly entitled to take a leading position in the medical profession.

The second plan, which is less laborious and less expensive than the first, is very well adapted to those whose means are limited, and whose time of study is brief. Supposing the master to be a man of average honesty, and the pupil a youth of average intellect, the period of two years is spent not unprofitably in acquiring a general knowledge of the profession; but, supposing the master to be a man of intellect as well as honesty (and we know there are many such), the period so passed is valuable in the very highest degree. We need hardly state, that the idea of representing apprentices in the light of menials is merely a poetical fiction, which might have been applicable during the last century, when Parson Trulliber was regarded as a humorous sketch of some of the peculiarities of the English clergy, and when Captain Oakum and Dr. MacShane were admitted as portraits of certain characters who then figured in the British navy. We do not desire that the legislature should retain the system of apprenticeship; but we are quite confident that if it were abolished immediately, a plan of a very similar character would be voluntarily adopted in a vast number of cases.

The third plan is undoubtedly the worst that was every tolerated by authority, and is in our opinion wholly inconsistent with that discipline of

the mind which is absolutely necessary in learning a profession. Admitting, as we cheerfully do, that many young men who have been sent to study at one of our great metropolitan cities, have at once entered into a severe course of mental and moral training, and have eventually become ornaments of the profession ; yet it is notorious, that multitudes of young men so situated, fall into idle and dissipated habits, and at the end of their academical or hospital career, manage to squeeze through their examination by the help of a grinder, or what is just as common, abandon the profession altogether in disgust. We cannot understand why the candidate for holy orders should reside for a certain time at college ; why the embryo barrister should keep terms in one of the inns of court ; why the future attorney should be articled to a senior in the same profession ; why the junior officer in the army, or navy, should be for a period placed under the control of superior authority ; and why the junior member of the medical profession alone should be exempted from all superintendence.

We do not hesitate, therefore, to express our decided opinion, that, putting the system of apprenticeship entirely out of the question, it is clearly to the advantage of the junior members of the profession that something of a collegiate course of education should be most strongly advocated ; for, admitting that this system may not in all cases reform the vicious, or sober the thoughtless, yet it cannot be denied that such a system is more likely to be advantageous to the student than that which throws him at once upon his own resources in one of our great cities, without a friend to cheer his loneliness, and without a guide to direct his steps.

We conceive that all these circumstances have a most important bearing upon MEDICAL ETHICS ; for as the child is father to the man, so must the student be the parent of the practitioner. We are not disposed to argue with any severity upon the follies of youth, and we are disposed to make many allowances for the exuberance of spirits which characterises the spring-time of human existence ; but it cannot be questioned, that it is the duty of the senior members of our profession, whether teachers, writers, or practitioners, to direct the dawning energies of the youthful mind in a proper course, and to impress upon the understanding the conviction of the importance of the mission which the medical practitioner is called upon to fulfil. Nor can it be denied that habits acquired in early life have a most important influence upon a man's future career ; and hence we have urged, and shall continue to urge, most emphatically, the necessity of establishing habits of order and discipline at the earliest possible period. It is for this reason, that, in the absence of a collegiate system, we have refrained from joining some of our contemporaries in their denunciations of apprenticeships ; for even supposing the practitioner, who takes an apprentice, to be a man without striking ability, yet, if he be a person of good moral character and respectability, the arrangements of his house will involve, on the part of the pupil, an attention to those minor duties and decencies of life, which, although apparently unimportant, have a very considerable influence in forming the character, and elevating the moral feelings. Under any system of medical education, a pupillage of two or three years with a practitioner would always be recommended, as a preliminary, or as an accompaniment to medical studies ; and, indeed, the system of private superintendence has certain advantages over the collegiate plan ; for, in the latter case, there is an uniformity of expense, which is inapplicable to all cases ; while, in the former, the pecuniary arrangements may be made according to the means of the respective parties. It is also obvious, that a pupil who is placed in immediate personal contact with a practitioner must have numerous opportunities of acquiring a practical knowledge of many parts of the profession ; and even if he be compelled to work at practical pharmacy for some time, we consider that it is advantageous rather than otherwise. We do not advocate the propriety of devoting *five years* to such a purpose ; but we do not argue against

such a waste of time, simply because it is neither required by law, nor now sanctioned by custom.

We cannot help expressing our deep regret that some uniform plan is not adopted in all British universities and medical schools, for obtaining some evidence of preliminary knowledge from the pupils on commencing their medical studies. At the English universities we have seen that the student must pass an examination in arts; but in Scotland no such test is required; and hence it has often happened that students have entered upon, and have completed their medical career, without possessing even an elementary knowledge of the classical languages! We find, by referring to the Minutes of Evidence upon Medical Education, taken at a Committee of the House of Commons, that a considerable number of Scotch graduates have been rejected at the Apothecaries' Hall, in London, from their inability to translate prescriptions!! This lamentable result may be fully explained by the laxity of the system formerly pursued at some of the Scotch universities, where students were received indiscriminately, without any inquiry being made as to their previous education. While thus unequivocally condemning the practice of allowing students to complete their medical career without any reference to their attainments in general science, we are happy to notice, in terms of commendation, the following Regulation of the Royal College of Surgeons of Edinburgh, and we only regret that the amount of preliminary knowledge required should be so small. "Every candidate for the diploma of the Royal College must, either previously to, or during his medical education, have received regular instruction in the elements of mathematics; and must have subsequently attended a course of mechanical philosophy, of at least three months' duration, and of not fewer than sixty lectures." It is a pity that the student is not *examined*. Evidence that he has paid the money for lectures is not sufficient.

In Ireland, it appears that the constituted authorities are sensible of the importance to be attached to general science, as a preliminary to medical education. Trinity College, Dublin, requires that the candidates for the degree of Bachelor of Medicine shall have previously taken the degree of Bachelor of Arts, or shall have, at least, completed the usual education and examinations in arts of the first two years of the undergraduate course. The Royal College of Surgeons of Ireland requires that the candidate for examination should produce a certificate that he has passed a previous examination as to his acquaintance with the Greek and Latin languages. The Apothecaries' Hall of Ireland requires that every candidate shall be examined, *before his apprenticeship*, in the following books: the Works of Sallust; the first six books of the *Æneid* of Virgil; the Satires and Epistles of Horace; the Greek Testament; the Dialogues of Lucian; the first four books of Homer's *Iliad*; the first six books of *Telemachus*, the History of Charles the Twelfth (in French); the first two books of Euclid; and algebra.

The little work, of which the title stands at the head of the present article, is a very able address to the medical students of Queen's College, Cork, and we may state that the views advanced by the lecturer are quite in accordance with our own. We find, that in order to graduate in the Queen's University in Ireland, it is necessary that the student should pass a matriculation examination, and that he is recommended, though not compelled, to graduate in arts. Dr. Fleming, taking the same views as those which we have repeatedly advanced, argues very strongly in favour of preliminary education, in order to place the practitioner of medicine at least upon a level with the members of the other learned professions. He recommends the student to make himself acquainted with the classical languages before the commencement of his medical studies, and he very properly recommends, in addition, an acquaintance with the French and German languages. "Thus educated," says Dr. Fleming, "with his mind invigorated and stored with a large amount of general and useful knowledge, the student is prepared to enter with advantage

on the special and more complex studies of his profession, and he may aspire, not merely to the successful practice of a routine art, but to the complete knowledge and advancement of a most difficult science. *Your preliminary knowledge already tested by examination*, and your medical studies once begun, I recommend you to give your almost undivided attention to the latter. The earnest student is quickly enamoured of his studies, and, conscious of their extent and immense importance to his future career, is most unwilling to devote time to any pursuit not having a direct and obvious bearing upon his profession." Here we must pause for the present.

(To be continued.)

REMARKS ON INSANITY: ITS NATURE AND TREATMENT. By HENRY MONRO, M.B. Oxon., F.R.C.P. 8vo. pp. 150.

DR. MONRO'S object, in this very interesting essay, is to prove that insanity is a disease of a corporeal nature; that, without seeking for any more subtle or metaphysical cause, we may believe insane phenomena to arise from those states of *irritability* and *deficiency* of action in the sensorium which are the consequences of loss of nervous tone. That this loss of nervous tone is caused by a premature and abnormal exhaustibility of the vital powers of the sensorium; that this infirmity is essentially a local one, though torpor of the general physical and vital powers assists it; and that its origin is to be esteemed constitutional, congenital, and frequently hereditary.

"As a part of, and arising from this theory, the *coincident excesses* and *deficiencies* of mental phenomena, manifested by the insane, are attributed to the *coincident* existence (in different parts of the sensorium) of those two stages of loss of nervous tone; *irritable excess of action* and *paralysis*. This view of the case renders it unnecessary to believe that the violent excesses of the insane must arise from a too sthenic condition of the system; a doctrine which experience so much contradicts, but which the want of experience so often propagated."

These views are supported by a comparison of the history of insanity with the history of other imperfect conditions of the mind; as dreaming, somnambulism, voluntary abstraction of mind, passion, the mind of infancy, senile imbecility, intoxication, fever, etc.

They are then illustrated by an examination of the actual physical condition of the insane, including a discussion of the relation which the condition of the vascular system holds towards the disease. This is considered under the three heads of inflammatory action, deterioration of blood, and pressure. The depressed state of the general vital and physical powers of the insane are then reviewed; the existence of keenness of sensibilities is shown to be a frequent concomitant of such condition; and the proneness of the female sex to insanity is adduced as corroborative of the theory.

The whole concludes with the narrative of cases successfully treated in accordance with these views.

We cordially recommend this little work to our readers, as being the production of one fully and practically acquainted with the subject. At the same time we must record our conviction, that inquiries must be pushed still further before we arrive at the ultimate step. The *cause* of Dr. Monro's cause must be looked for and found, before we can ascertain correctly why loss of nervous tone produces these special phenomena, seeing that in numberless instances there exist nervous defects without one symptom of mental disease.

THE PHILOSOPHY OF VITAL MOTION. By CHARLES BLAND RADCLIFFE, M.B. pp. 158. London: 1851.

This author, who has written a very good work entitled *Proteus, or the Law of Nature*, which was reviewed last year in this Journal, now comes

before the public with a philosophical work on physiology. As in his former work, Dr. Radcliffe exhibited considerable ability in bringing a great store of botanical and zoological knowledge to bear in his treatise on the *forms* of organic bodies, so, in the present work, he employs his resources in illustrating the nature of the *motions* which they perform.

He traces first the motion of fluids in the cells, and vessels, and inter-cellular passages of plants; then he treats of the motion of fluids in the lowest tribes of animals. Ascending in the scale of creation, he then describes the movements observed in the muscular coat of the alimentary canal, and involuntary muscles; and, lastly, he describes the vital motions of the heart, and the circumstances which influence its functions.

Although there is no originality in this little work, it is very well put together, and exhibits considerable powers of research and of condensation; and although we do not like it quite so well as the author's former publication, we consider it nevertheless a very creditable production.

DIE GEBURTSHILFLICHE PRAXIS, ERLAEUTERT DURCH ERGEBNISSE DER II GEBÄRKLINIK ZU WIEN, und deren stete Vergleichung mit den statistischen Ausweisen der Anstalten zu Paris, Dublin, etc. Von Dr. F. H. ARNETH, Assistent an der II Gebärlinik zu Wien. pp. 254. Wien: 1851.

[The Practice of the Second Obstetric Clinic at Vienna, compared with that of the Lying-in Institutions in Paris, Dublin, etc. By Dr. F. H. ARNETH.]

This work consists of a statistical analysis of the cases admitted into the second division of the Lying-in Hospital at Vienna, from Oct. 15, 1847, to the same day in 1849. Prefixed is an account of the general management of the institution, together with a table, shewing the annual results from the time when it was built by the Emperor Joseph the Second, in 1774, to the end of 1849. The total numbers are; females admitted, 204,243; children born, 189,185; deaths of mothers, 7878, or 3·85 per cent.; of children, 11,092, or 5·86 per cent. In that part of the hospital which Dr. ARNETH more particularly notices, the results, since it was opened in 1833, have been the following: children born alive,—males, 19,434, females, 18,573; born dead,—males, 859, females, 706; twin births, 442; triplets, 3; females admitted, 39,121; deaths of mothers, 1,583, of male children, 890, of female children, 621.

During the period included in Dr. Arneth's report, there were 6,527 women delivered; 3,280 male children, and 3104 females, were born alive; 118 males, and 106 females, were still-born; there were 88 cases of twins; 127 of the women, and 129 male and 115 female children, died. The statistics of the various complications occurring in obstetric practice are given, and illustrated by concisely reported cases. A very valuable feature of this work is, that the author has collected the statistics furnished by Mesdames Lachapelle and Boivin, of Paris, Drs. Boer, Klein, and Bartsch, of Vienna, and Drs. Collins, McClintock, and Hardy of Dublin, Dr. Simpson, Dr. Oldham, etc., and has, partly in the text, and partly in tables, placed them in juxtaposition with the results of his own observations.

Puerperal convulsions occurred in 13 cases. Their more frequent occurrence in primiparæ is noticed by the author, who states that 8 cases out of 13 occurred under this condition. Of the 13 cases, was one of twins; one of delivery at the sixth month, and one at the seventh month. Ten of the children were males. The ages of the patients ranged from nineteen to twenty-eight years. The author adverts to the fact, that in nearly all the cases, observed by himself and others, the head of the child has been the presenting part.

Great credit is due to Dr. Arneth for his pamphlet; which we regard as a valuable contribution to the statistics of midwifery.

CRITICAL DIGEST OF THE BRITISH AND FOREIGN MEDICAL JOURNALS.

ANATOMY AND PHYSIOLOGY.

CASEIN IN THE BLOOD; SYNTHETICAL PROOF BY FORMATION OF ARTIFICIAL MILK.

DR. PANUM, of Copenhagen, of whose interesting accounts of the discovery of Casein in the Blood, we gave a translation in the July number of this Journal for 1850, has published two additional articles on the subject in the *Bibliothek for Læger* for April and July 1850.

In his article in the April number, after recapitulating the facts brought forward in his previous paper, and pointing out the difficulty of establishing a chemical or a physiological distinction between casein and coagulated albumen, the author observes :

"If we institute a comparison between the substance precipitated from blood-serum by means of water and diluted acetic acid, and albumen separated in the same manner from its combination with soda, *we find* truly greater differences than can be distinguished between casein and coagulated albumen.

"Before the publication of my former contribution, I had already performed various experiments with the view of instituting a more accurate comparison between the material under consideration and albumen separated from its combination with soda. To procure albuminate of soda, I separated the albumen from the serum, then added soda, and applied slight warmth. A greater or less quantity of albumen (according to the quantity of soda employed) entered into combination with the alkali as albuminate of soda, and was precipitated by acetic acid. A difference was here observed between the albumen of serum and that of an egg. For while albumen from an egg required no warming to promote its entering into combination with soda, or its precipitation by means of acetic acid, the albumen of serum had to be slightly warmed before it would unite with an alkali, or give a precipitate with acetic acid.

"The albumen which was precipitated from albuminate of soda, as above described, was always *soluble with difficulty, even in a considerable excess of acetic acid* ; eight or ten parts of acetic acid to one of albumen produced no solution. On the other hand, the material *originally* present in the serum, and precipitated from it by acetic acid, was soluble in so slight an excess of acetic acid, that it is almost a *finer test of the acid, alkaline, or neutral properties of the liquid, than litmus paper*. This difference seems important ; and can scarcely be without essential influence on the organic economy . . .

"The precipitate thrown down by acetic acid from albuminate of soda, appears as *firm flocks*, which are not changed by shaking, and which resemble what is seen when a not too highly diluted solution of albumen is boiled. The other matter produces a perfectly homogeneous opacity in the liquid, and only after some time forms something like a solid deposit in the bottom of the vessel, which, however, immediately disappears, and is resolved into a general opacity, when the liquid is slightly moved.

"Moreover, if the albumen precipitated from a somewhat diluted solution by boiling, or from a solution of albuminate of soda by acetic acid, be collected in a filter, it forms, when half dry, *an elastic mass, by no means glutinous*. The other substance, on the contrary, when half dry, forms a *very glutinous mass*, almost like turpentine or bird-lime.

"The albumen, when collected in a filter, has, when dry, a *dirty yellow-*

brown colour. In my previous contribution, I referred to the circumstance, that the substance I am describing sometimes assumed a *beautiful green colour* when thoroughly dried. At that time, I attributed it more to accidental circumstances than to any essential difference, that the substance became green or yellow-brown on drying, as from the same serum I sometimes procured a green and sometimes a yellow product. I now find, that the substance is always of a beautiful green colour when the serum is perfectly clean and free from red blood-corpuscles. But if serum be used, in which there is found a greater or less number of blood-corpuscles, the green colour is effaced by the accompanying redness of the blood, and the product becomes either dirty yellow or dirty brown, according to the number of blood-corpuscles. The green colour is removed neither by alcohol, ether, nor water, and seems to belong essentially to the casein.

"However lightly these differences may be thought of, they are yet not less important than the distinction already referred to, between the so-called soluble casein and albuminate of soda. The preconceived opinion that the material under consideration must be albuminate of soda can thus no longer serve as a proof against its identity with what is called casein, or the essential nitrogenous constituent of milk."

RELATIVE QUANTITY IN THE BLOOD. Dr. Panum states that he is engaged in a quantitative analysis of the casein in different individuals. He does not yet attempt to draw conclusions; but states that in 1000 parts of dried serum he has found in men, in 3 cases, from 4 to 7 parts; in 8 cases of women, from 5.5 to 12.5 parts. The greatest quantities (9.9—11.4—12.5) were in lying-in women shortly after parturition. In nurses there was an average of from 6.5 to 7.4 parts.

FORMATION OF ARTIFICIAL MILK. In the July number of the *Bibliothek for Læger*, Dr. Panum writes as follows:—"It occurred to me that the question of the identity of the material I have been describing with casein, might be solved by the *synthetical* method, which, though it can seldom be satisfactorily employed in scientific diagnosis, yet in the inability of analytical chemistry with regard to the protein compounds, is not to be despised. If it were possible, by adding the necessary constituents, to form from the substance under consideration some universally known product containing casein, such as milk or cheese, we should have a striking proof of the identity of the substance with casein.

"I obtained a quantity of serum from bullock's blood. To this I added acetic acid, in the proportion of six drops of concentrated acid to an ounce of serum, and then a considerable quantity of water. The substance described in my former contributions sank on standing to the bottom of the vessel, so that the superabundant clear fluid could be poured off. On again adding water and letting the substance sink to the bottom, it was rendered almost perfectly free from soluble albumen, etc. After it had settled as much as possible, the water was poured off, so as not to waste the substance, which remained suspended in a greater quantity of water than casein is diluted with in milk. It was now my object to find out, whether the solution of this substance produced by salts or an alkali could be brought to coagulate by contact with the mucous membrane of the stomach of kittens or puppies; and whether it were possible to produce a substance which, in taste and other circumstances, should agree with milk. But as it would probably be difficult to make animals use the solution as milk, unless the other constituents of milk, namely butter and sugar, were mixed with it, and as the taste and peculiarities of cheese might be modified by them, I first tried, by adding these substances, to produce a liquid which should have some resemblance to milk. At a temperature of 30 Raumur, I added to the milky liquid phosphate of soda, till all the supposed casein was dissolved. I then added butter and sugar in the proportions in which they are usually

contained in milk, and, after the butter was melted, I shook the whole mixture in a flask. The liquid, at first greyish or dirty yellow, became of the colour of egg-flip, and, as it cooled, became more and more like milk. The clearer and the less mixed with red blood-corpuscles the serum was, the clearer was the solution and the whiter the milk-like fluid. If the serum was perfectly free from blood-corpuscles, the emulsion, when diluted with water, had the same bluish colour as milk and water; but if there was a strong blood-red tinge in the serum, the solution in phosphate of soda had a reddish and the emulsion a weak yellowish tint. The product had a taste which bore a most striking resemblance to that of true milk; only it was a little more sweet, and left a feeble, though recognisable, bitter after-taste.

Under the microscope, I observed in the emulsion innumerable small globules, exactly like those in milk. On comparing them with those found in milk, scarcely any difference could be perceived, except that their average size in the artificial milk was somewhat greater than in the natural. The globules in the artificial milk were surrounded by a covering, and not simple drops of oil; this covering often showed a distinct though very fine folding, especially on the larger globules. The globules (like those of true milk) were not dissolved in ether, until the covering had been removed by treating them with nitric acid. But by the side of these small globules there were some which were somewhat greater, and presented in their interior appearances which, if they had been furnished from the organised body, would have been certainly considered as nuclei, granular cell-contents, etc. . . .

As the difficulties, which might have been expected to arise in the microscopic comparison of the artificial and the true milk, had so unexpectedly disappeared, I felt myself called on to inquire whether any more perfect imitation could be attained. The most striking difference, which the artificial milk presented on a superficial examination, was that it required a far shorter time than real milk to form a layer of cream on the surface, and that, after standing some time longer, a layer of clear liquid was formed at the bottom of the vessel. I ascribed this failure to the greater average size of the globules in the emulsion, as compared with true milk-globules. When I employed sugar of milk in place of common sugar, the emulsion was uniform, and shewed no layer of clear liquid at the bottom of the vessel, even when more water was added. At the same time, the average size of the corpuscles became less, so that they could not be distinguished by their size from the true milk-globules, and they were now free from any appearance of nuclei or granular cell-contents. The cream was longer in rising to the surface; and the great sweetness which the emulsion had, when made with common sugar, was no longer prominent, so that the liquid tasted still more like milk. A slight smack of salt disappeared, when the butter was washed in water; and a slightly harsh taste of the butter was still farther removed when unsalted butter was used, which had been freshly churned, and washed with water. There was still a slightly bitter after-taste, but this was removed by using carbonate instead of phosphate of soda; a much smaller quantity of the former salt being required to produce the required solution. It was now impossible for me to recognise, by the taste, any difference between artificial and real milk. As, however, it might be said that "*de gustibus non est disputandum*," I submitted the liquid to the taste of others, with the same result. . . .

It now only remained, to render the agreement perfect between the artificial and true milk, that the former should coagulate when brought into contact with the mucous membrane of the stomach. When I used common sugar, it was not wonderful that my attempts thus to make the liquid coagulate, failed; for it is well known, that the addition of sugar to milk retards or prevents its coagulation. But, even after I had used sugar of milk, I could not perfectly succeed in making the milk coagulate. Instead of fresh calf's stomach I used the artificially prepared swine's stomach, which

is commonly used in the dairies, with or without a temperature of 40 R. ; and I also gave the liquid to two kittens, who drank it greedily, and whom I then killed. Under these circumstances, as well as by mere standing, the artificial milk turned, and separated into a clear liquid, and a thick curdy mass, which had very strongly the well known smell of sour milk ; but I could not produce a consistent coagulum, which could be collected in linen, and pressed out. But when the original substance separated from the serum, after being washed from soluble albumen, was warmed, it formed masses resembling pressed curds, and could be collected on a cloth, while the liquid ran through quite clear.

The identity of artificial with natural milk, and of the substance found in the blood with casein, may seem to be not proved ; yet the resemblance is so great as to strengthen the probability of their being identical. I have in vain endeavoured to produce from albumen, precipitated from albuminate of soda by acetic acid, and dissolved in phosphate or carbonate of soda, a liquid having the slightest resemblance in taste to milk.

WYMAN ON THE ARRANGEMENT OF CANCELLI IN BONE.

Professor JEFFRIES WYMAN has stated these general conclusions as to the arrangement of the cancelli in human bones.

1. The cancelli of such bones as assist in supporting the weight of the body, are arranged either in the direction of that weight, or in such a manner as to support and brace those cancelli which are in that direction. In a mechanical point of view, they may be regarded in nearly all these bones as a series of "studs" and "braces".

2. The direction of these fibres in some of the bones of the human skeleton is characteristic, and, it is believed, has a definite relation to the erect position, which is naturally assumed by man alone.

These structures are most uniform and clearly defined in adult and middle-aged skeletons.

In the lumbar vertebræ, which support the weight of the body vertically, these cancelli run vertically and transversely, the vertical fibres directly sustaining the pressure, the transverse ones bracing them at right angles.

The neck of the thigh-bone is adapted to resist pressure by its oval form, the longest axis being vertical, and by the greater thickness of the wall of bone on its under side, to which the weight is more directly transmitted. Dr. Wyman describes another provision, which consists "in having the cancelli of each femur so arranged as to form a segment of a framed arch or truss, which co-operates with the external shell in sustaining the weight of the body ; the necks of the two femora forming together opposite segments of an arch". He describes two sets of cancelli. One set rests or abuts on the convex surface of the thick shell which forms the under wall of the neck, and from this they diverge toward the upper portion of the head, neck, trochanter major, and portion of the shaft just below this last ; those which extend into the head are much the longest. The fibres of the second series are arranged in parallel curves, the extremes of which are attached on the one hand to the wall of bone at the base of the great trochanter, and on the other to that portion of the preceding class of fibres which supports the upper surface of the head, as well as to the shell of bone between it and the trochanter. Both of these series are braced by other fibres, which are arranged at right angles to their direction. The cancelli of the great trochanter have no determinate form. The internal fibres thus act as braces, assisting the outer walls to support the weight of the body ; the curved fibres resisting by their tenacity, the straight or radiating ones by their rigidity. The long straight fibres transmit weight directly to the under side of the neck, and are themselves supported by the curved fibres, and these in turn by the radiating fibres.

In the lower part of the femur and the tibia, the cancelli are adapted to support vertical pressure.

On the astragalus, the pressure is vertical; but this bone rests on two others; one below it, the os calcis, the other in front, the scaphoides; within there exist two series of cancelli, directing the pressure on the surfaces of support. Very nearly the same description applies to the os calcis, where there are two intersecting sets of fibres, the one radiating, the other in concentric curves.

These peculiar arrangements are not found in quadrupeds, and only traces of them exist in the apes, which most resemble man. In him, they are mainly or entirely confined to bones directly connected with locomotion. A certain direction of fibres in each instance coincides with a certain direction, or certain directions of the transmission of pressure. From this constant association of structure and function, says Professor Wyman, the inference seems unavoidable, that they are means and ends. [*Boston Journal of Natural History*, vol. vi, No. 1, p. 125, as quoted in *Trans. of Amer. Med. Assoc.*, vol. iii, p. 53.]

PRACTICE OF MEDICINE AND PATHOLOGY.

THE IMPORTANCE OF CERTAIN PREMONITORY SYMPTOMS OF SEVERE CEREBRAL DISEASE.

The following is a slightly abridged translation of an instructive memoir published by Dr. DEVAY, of Lyons, in the *Gazette Médicale de Paris* for January 4th and 11th, 1851.

Those severe cerebral affections which rapidly terminate existence, and still more those which, before the fatal issue, gradually destroy the intellect, sensation, and motion, have been the object of much research. Notwithstanding numerous physiological experiments, vivisections, autopsies, minute examinations of the different degrees of consistence and colour of cerebral substance, etc., the knowledge of the physician has been but little enriched. The cranial vault offers an inflexible resistance to exploration; and this should impress on us the necessity of depending less on anatomy in the study of cerebral diseases. Instead of studying the brain when it is dead or dying, we should fix our attention on the unusual manifestations, and carefully collect the various aberrations, either of sensibility or of motion. If we cannot examine the brain by palpation like other viscera, if we cannot auscultate it, as we do the heart or lungs, and thus seize on, by means of one or more of our senses, its successive degradations, we can, at least, detect its commencing affections, by observing the derangements of the functions over which it presides—the intellect, sensation, and motion.

Researches of this kind embrace the premonitory symptoms of diseases varying in their anatomical relations; they take a view of all those affections which arise from an alteration in the brain, properly so called, from apoplexy to mental alienation. But even when, in a given case of cerebral disease, the elements are most favourable, a diagnosis can only be formed with reserve. Thus, when we expect to find softening, we may meet with induration of the cerebral substance; we may expect to find tubercles, and discover hydatids, or osseous tumours. The phenomena presented by patients have not then always that conformity, which would permit particular symptoms to be accurately referred to certain determinate forms of pathological affections. This clinical difficulty in the appreciation of the symptoms of confirmed disease, exists in an equal degree with regard to the interpretation of the premonitory symptoms. These may point to a functional derangement of the encephalon, without any anatomical lesion; and, when the latter is present, it may vary in its form. The infinite variety of forms,

presented by the symptoms of a cerebral disease, can no more be explained by the various conditions in which the organ is found, which has been their seat, than the different modes, in which the same function is performed in different individuals, can be accounted for by anatomical differences in the part which is its instrument. Nevertheless, the study of premonitory symptoms may be useful, even for the anatomical diagnosis of the affection.

After having devoted a considerable number of years to the attentive observation of the severe affections of the brain, we have become convinced, that there *most frequently* exists, especially in those which have a chronic course, a precursory stage, the signs in which are the diminutives of those symptoms which will, at a later period, constitute the more advanced degree of the disease. Thus, slight want of power in the lower limbs, and defect of precision in certain movements, represent paraplegia, or complete paralysis; and a slight alteration of the intellect bears the same relation to the delirium following it. In certain cases, without doubt, a sudden effusion of blood, breaking down the cerebral structure, may suddenly cut off an individual who a few moments before seemed in perfect health; in this case we admit that there has been no intermediate stage—that the index to the explosion has not existed. But this is by no means the case in a very great number of other forms of apoplexy, in which, as may be easily proved by examples, the precursory symptoms, denoting cerebral lesion, may continue for a long time. These forms of cerebral hæmorrhage enter then into the category of those severe affections of the brain—softening, induration, mental alienation, etc.—where a hidden molecular change has been going on before they have declared themselves. Andral, in speaking of certain premonitory symptoms of cerebral hæmorrhage, says: “Their existence incontestably proves that, before the blood is effused, there is already a morbid action going on in the brain, the nature of which it would be important to determine.”

I. PREMONITORY SIGNS, FURNISHED BY THE INTELLECTUAL AND MORAL FACULTIES. Almost all authors of repute have mentioned, without always attaching much importance to them, the disturbances of intellect which precede attacks of severe cerebral ideas. M. Gendrin says: “Apoplectic attacks are often preceded by a difficulty in undertaking intellectual work, by an incapacity for unusual attention, by an extraordinary irascibility, by a morose weakness which exaggerates impressions, and produces terrors without a cause, or by unreasonable anxiety concerning ourselves, or those related to us.”¹ Insanity also has its period of incubation, its premonitory symptoms; and frequently it is found that the first act of insanity, which caused alarm, has been preceded by several symptoms which had escaped observation, and sometimes the first phenomenon of the disease has been taken for its cause. The insane often combat their false ideas, before the disorder of their reason, and the internal contest which precedes the explosion of their madness, are perceived.² The most general precursor of every severe affection of the brain is a state of *cerebral lassitude*, presenting much analogy to that state of intellectual torpor which follows severe or pestilential fevers. There is observed in the habitual gesture of the patients, in their attitudes and movements, a total absence of what may be called the consciousness of action. The brain seems to have lost its *balancing* power over the *ensemble* of the functions of the life of relation. These patients are often in a constant state of slight habitual vertigo, which they call *weakness of the head*, and which is frequently accompanied by debility in the limbs.

The *memory* is frequently impaired in the precursory period of cerebral affections. Thus, patients have forgotten the names of their friends, or of the most common things. In conversation, they have difficulty in finding

¹ GENDRIN. *Traité philosophique de Médecine pratique*, tome i, p. 487.

² ESQUIROL. *Des Maladies Mentales*, tome i, pp. 77 et suivant.

the proper word to express their meaning, and are obliged to make use of circumlocutions. More rarely, the memory becomes more powerful; it seems to take a new flight, and reproduces, to the great astonishment of the patient and his attendants, events which had seemed to be entirely forgotten. The curious and inexplicable fact of *reminiscence* corresponds to the exaltation of the special sensibility of certain senses. It is sometimes observed after a slight attack of apoplexy. Professor Brachet has communicated the case of a man, aged 50, who was attacked with apoplexy: he preserved his speech, but could only express himself correctly in the *patois* of his country, which he had entirely forgotten while in health.

Next to the impairment of the memory, and also of the attention, which is fixed with difficulty, or not at all, on objects presented to the notice of the individual, the most striking change is in *volition*, which is diminished. The man who has hitherto been most firm, who has shewn most tenacity in his views, who has pursued the plan of his life with great determination, becomes, in a measure, like the toy of a child; those who are about him, even his inferiors, can command him. Human depravity has often taken advantage of this moral decadence for culpable ends; and the man who has hitherto most rigorously and carefully managed his affairs, is all at once spoiled of his goods, either by extorted donations, or by burdensome expenses. The public see in these cases *bizareries* of character; the physiologist and the physician see in them the first expression of a pathological condition. This weakening of the will, which, according to our observations, is chiefly connected with those cerebral lesions which lead to lunacy, or to paralysis of the insane, necessitates an alteration of the judgment. . . . The will is the result of the other faculties; and it is not because it is wanting in the idiot, or lunatic, that they are irresponsible; but rather because they are ignorant of the rules which should direct it.

There is but a slight transition from this to *perversion of the moral faculties*—one of the most mysterious points in psychology. It would seem as if the balancing power of the brain, which regulates the locomotive movements, were also defective as regarded the moral part of the man, so that he fell under the empire of instinct. Hence arises degradation of ideas, and lascivious conversation, in persons who have hitherto appeared full of decency and modesty. And this vitiation of the moral faculty may break through the sphere of theory, and become realised in action. This fact is important in a medico-legal point of view. . . .

The already important and difficult question of moral responsibility will become more delicate, under the supposition of a commencing affection of the organ of thought. When a person of hitherto irreproachable character commits a reprehensible action, the physician is disposed to plead extenuating circumstances, not because the case demands it, but for the sake of human nature, knowing all the aberrations of which it is susceptible. Experience also should be invoked, as well as reason, in deciding on so delicate a case.

I am now attending a woman, aged 42, who for a year and a half has gradually fallen into a state denoting general softening of the brain: almost entire blindness, inability to walk, semi-stupid intellect, etc., etc. Two years ago, she only felt severe and almost constant pain in the head; her general health was in other respects perfectly good, her intellect clear. Three years ago, this woman, though possessed of a competency, committed a petty theft in a fair. Dr. Briere de Boismont, in his observations on General Paralysis of the Insane, states that this disease is preceded by a premonitory period, for about six or seven years, or more, before the apparent explosion of the insanity. There are *perversions of the moral and affective faculties*, without less ability on the part of the individuals presenting these changes to fulfil the duties of social life, or to perform their functions. The acts of indecency of dishonesty, of debauchery, like which there had been nothing before, are

suppressed and compensated for; then at last the patient is seized with symptoms of general paralysis.

"A person high in office," says Dr. Brierre de Boismont, "had performed the duties of his station up to the time when I was consulted; and yet the details, which were furnished to me by his wife, left no doubt that his moral and affective faculties had been for some time impaired. From having been generous and honest, he had, for more than six years, exhibited a degree of sordid avarice and unbridled licentiousness. With the progress of the disease, his avarice was manifested in mean actions; he refused to pay his debts, maintaining that he had already done so; and even purloined objects from the houses of his acquaintances. Until the last-named acts were committed, no one had suspected that his mind was disordered. . . . Some time after, I was called in consultation to see a retired public officer, whose thefts had made much noise some years previously. The particulars with which I was furnished regarding this interesting subject, made me then think that this person was labouring under the premonitory symptoms of general paralysis; I was almost sure that I should see a paralytic lunatic. The first words which he uttered in my presence showed me that the affection was far advanced. His delinquencies had been noticed eight years before; and it was only a few months ago that mental alienation was recognised."¹

Dr. Passot has recently observed a case, in which delirium tremens appears to have been the proximate cause of the moral disturbance which supervened at a later period. Although differing in some circumstances, and although the proof *à posteriori*, that is, by the termination, has not yet been furnished, this case appears to have some resemblance to those related above. A cooper, aged 34, previously of irreproachable character, and enjoying a high reputation for honesty, was seized with delirium tremens, from which he recovered. But from this moment his conduct was deranged; he borrowed money from all quarters, and denied having ever received it. At last, after having cheated many, he fled to avoid prosecution. His intellect appeared sound; but Dr. Passot remarked, that he gave proofs of a considerable impairment of judgment, by asking persons for money from whom he had already borrowed.

These and similar examples show what difficulties are presented in this new point of view of the doctrine of moral responsibility, and how much the question requires to be elucidated by an attentive study of the precursory symptoms of encephalic affections. It may be—and there is no physiological improbability in the supposition—that an immoral or obscene action is as abrupt and unexpected an occurrence as an aberration of the senses; one of those irregular paralytic affections which almost infallibly denote an approaching disorganisation of the nervous centres. If there is a concomitance between the two occurrences, the aggregate of the pathological symptoms may be considered as furnishing evidence in favour of the non-culpability of the subject. But unfortunately the proof is often furnished only when the disease is confirmed—when the cerebral symptoms are already strongly marked. It will then be easy for the physician to trace the connexion between the previous act of the patient, and the symptoms which now appear; but will not the patient have already suffered the rigorous application of penal laws? This is a delicate problem, for the solution of which a most careful exercise of the conscience and knowledge of the physician is required. If any one is called on to give his opinion to enlighten justice regarding an infraction of morality, *committed without precedents*, in a moment when the individual is in full possession of the faculties of relation, he should express such opinion with the great reserve. It will be for him to institute a searching and severe inquiry into the previous condition of the patient, his attitudes, his sleep, his will, his memory, his sensation, etc.; and perhaps he

¹ Gazette Médicale de Paris, 1847, p. 393.

may then be able to discover some sign, from which he may deduce the irresponsibility of the subject.

The abrupt changes which may occur in a man's tastes, in his inclination, in his manner of living, in a word, in his social aspect, are worthy of attention. Modifications of this nature, when they do not appear in a slow and progressive manner, do not arise from the action of moral influences, and can only arise from a change in the nervous system. Thus it has long been remarked, that unusual gaiety in a habitually grave individual may denote the approach of an attack of apoplexy. It is the same with those who suddenly seek for noise and bustle, after having loved retirement and quietness for a great part of their life. We have known a man, aged 57, who, having up to that time led a grave and even austere life, gave himself up to the pursuit of amusements unsuited to his age, and was, a few months after, seized with sudden and complete apoplexy (*apoplexie foudroyante*). In this case, which we observed a few years ago, we were led to form an unfavourable prognosis. A man most estimable for mental endowments, and for the qualities of his heart, came one day to converse with us on subjects not relating to his health. His conversation was clear; nothing was indicated in his gait; but he had for some time complained of inaptitude for work. While we were occupied in writing a letter, we saw him rise, rummage a drawer, and open a note. This act, on the part of a person of the most polite and discreet habits, struck us forcibly. We connected it with two other circumstances which were known to us. During the revolution of February, this gentleman, holding an important post in the administration, had engaged, from the most disinterested and praiseworthy views, in public agitation, from which his mind had received a strong impression: his mother had also been attacked with senile dementia. Three months after, the patient lost his sight after violent headaches, and he subsequently died, with all the symptoms of cerebral softening. A complete change in the turn of the ideas, when it is not the result of advanced age, when it manifests itself in a short period of time, and when it cannot be traced to the action of moral influences, is very suspicious. We have known a young physician, who exhibited this phenomenon in a very marked manner, and who, a short time after, was seized with paralysis of the insane. When we knew him three years before, he was very free in his assertions, and inclined to exaggerate; but he had become discreet, and wary in his speech. His former condition, and the medium in which he had lived, shewed sufficiently that this change could not be the effect of a *progressive amendment*; we considered that there was some disease, and our opinion was ultimately confirmed.

It is conceivable, that the same psychological perturbation which changes the moral sentiments may likewise impair the sentiment of self-preservation; and hence that *suicidal melancholy* may mark the commencement of a severe affection of the brain. This disease is, moreover, very often conjoined with a lesion of the intellectual and affective faculties.

II. PREMONITORY SIGNS FURNISHED BY THE SENSORIAL FUNCTIONS. Most of these are furnished by the sense of *vision*. We will merely mention dimness, the appearance of objects as if coloured red, photophobia, etc., which may indicate threatening meningitis, as well as cerebral hyperæmia; these symptoms bear an especial relation to acute diseases of the encephalon. These signs may exist several years before the explosion of the disease. Before attacks of apoplexy, impairment of vision sometimes exists in a high degree without being known to the patients, especially when, as is most commonly the case, it is not sufficient to prevent them from seeing those who are about them. The mistake is the more easy, as this symptom may be limited to one eye; the other compensating for the weakness of its fellow. Amblyopia is a frequent symptom; sometimes there is complete blindness, as in the case of the Baron Hornestein, cited by Wepfer (*Anatomia Apoplecticorum*), who became blind three weeks before a fatal attack of apoplexy.

A valuable sign, belonging in some degree to what may be called the expression of the eyes, consists in a want of parallelism in these organs ; it is not squinting, nor is it the look of hallucination. It seems pretty well defined by the following expression : *The eyes are not in the axis of the reason.* There may be certain defects in this relation pointed out between a material object and a moral fact ; but those persons who are accustomed to scrutinise the human look, and to see reflected in it the different passions, will easily understand me.

The phenomenon of exaltation of special sensibility, as a precursory sign of a severe encephalic lesion, is sometimes met with. It is in this case, as in other circumstances in which it is observed, one of the most mysterious problems for the physiologist.¹ It is well known that hearing often becomes excessively acute before attacks of apoplexy. The patients, incommoded by the least noise, become irascible ; they perceive distant sounds, which are unheard by those who are with them. This fineness of hearing must be distinguished from the perception of strange and imaginary sounds, which is nothing but a sensorial hallucination.

The following is a case in which disease of the brain was first indicated by enlargement of the field of vision.

CASE. A painter, aged thirty-two, was admitted in 1849 into the Hôtel-Dieu at Lyons. This young man, who was possessed of some talent, had been gradually reduced to distress, partly by political disturbances, partly by other causes. A year before entering the hospital, his sight, which was previously good, acquired greater development ; from his window, which opened into a very long street, he could distinguish objects and persons whom he could before neither distinguish nor even see. This circumstance troubled him, and surprised those about him. The exaltation of vision continued until August 1848, when he was seized with violent continued pains in the right parietal region ; at this time there was slight weakness in the left arm. The symptoms increased till March 1849, when there was paralysis and contraction of the right arm, and blindness of the left eye. When he entered the hospital in July, the following was his condition. There was almost complete stupor ; the paralysed eye was almost completely covered by the upper eyelid ; there was paralysis, with contraction, of all the left side of the body ; the urine and fæces were discharged involuntarily. He continued in this state until the beginning of September, when death ensued, preceded by symptoms of slow fever. The autopsy revealed partial circumscribed softening of the middle and upper part of the right hemisphere, for the extent of about two *centimètres* ; the convolutions were pale and puffy ; the pulp was diffuent, and of a dirty grey colour. Except the corpus callosum, which appeared soft, the rest of the cerebral substance was sound.

This phenomenon, judging from a passage in the writings of Andral, seems to have been observed in other cases. "Cases have been observed in which, for a longer or shorter period before the attack, the sight has acquired an unusual degree of fineness. The existence of these important phenomena, which are often presented by vision at a larger or shorter period before the occurrence of hæmorrhage, prove incontestably that, before the blood is effused, there is already some morbid action, either continuous or intermittent, in the brain, of which it would be important to determine the precise nature."²

The sense of *hearing* may present the same modifications as that of vision. Some persons are tormented with drumming in the ear, with continued or intermittent tinkling. Some believe that they hear the most strange noises. These hallucinations are by no means the constant precursors of an encephalic

¹ See the *feuilleton* of the *Gazette Médicale* for 1848, t. iii, p. 41, where several cases of exaltation of the senses are related.

² ANDRAL. *Clinique Médicale*, tome v.

attack; they may be connected with simple perversions of the sensorial function.

PREMONITORY SIGNS FURNISHED BY THE ORGANS OF MOTION AND SENSATION. The alterations in the *muscular functions* present great variety, from the simple hesitation which we have already noticed, to paralysis which is complete, but which, on account of its nature and its seat, we shall denominate *irregular paralysis*. It is not uncommon to observe a state of general languor which makes the patients seek for rest—for the *far niente*. Van Swieten has remarked, in treating of apoplexy: *Primò oritur languor et amor quietis et otii*. At other times, those who are about to be attacked with cerebral disease are much agitated, and expend a great amount of activity in their movements. Dr. Tessier has lately attended a lady, aged 60, who from the critical age, has been subject to attacks every month, at the period when she used to menstruate. She loses consciousness; and, after having recovered her senses, is paralysed on one side of the body, with great embarrassment of speech. These symptoms continue some days, and gradually leave her, to return at the fixed period. But some days before the new attack, this lady, though usually quiet and peaceable, exhibits much agitation; she cannot remain in her place, and those who are about her always know what this sign means. In this case, we recognise an example of *periodic nervous apoplexy*.

Impairment of muscular motion is exhibited in various degrees. It is especially remarked in the lower limbs, which seem to bend under the weight of the body, and render the gait rather unsteady. This debility is the more striking if the person be young, and has no apparent cause for it. Portal was able to prognosticate an attack of apoplexy in a gentleman apparently in perfect health, from observing a slight fixedness in the left eye and a slight weakness in the leg of the same side. *The digitus semi-mortuus*, noticed by Dr. Marshall Hall, is one of those instances of *irregular paralysis*, of which it is so important to determine the true signification. Some time ago, we saw the following case. A man, aged 54, one day called on us. In conversation, he jokingly noticed a sort of deadness which he felt in the little finger of the left hand, while the rest of the hand was able to perform its ordinary functions. We advised him to put himself under treatment: he neglected this advice, and some days after was seized with cerebral congestion, which left his faculties remarkably weakened. *The digitus semi-mortuus* has shortly since been noticed in a valuable communication from Dr. Gillet de Grandmont.¹

Irregular paralyzes, which seem to arise from exhaustion of the sources of the sensitive and motor powers, may appear under circumstances in which they do not constitute a symptom of such great importance. Such are those which sometimes follow hysterical convulsions, lead-colic, venereal abuses, etc. Here, these phenomena are connected with *transient* modifications of innervation. The suddenness of the attacks, their frequent isolation from other symptoms, their seat in parts distant from each other, while those lying between preserve the integrity of their movements, constitute the exceptional characters of those palsies which are connected with a latent alteration in the nervous centres. We must not lose sight of the difficulty of deglutition which some patients experience some time before being attacked: as well as the semi-paralysis of the vocal cords and tongue, giving rise to stammering or aphonia. The paralysis of the upper eyelids, which become œdematous, is also a sign of great value.

General sensibility may be abolished, simply diminished, or exaggerated. The two first forms almost always follow muscular paralysis; but they may

¹ Gazette Médicale, 1850, p. 400. A translation of Dr. de Grandmont's letter was given at p. 698 of the LONDON JOURNAL OF MEDICINE for July 1850.

exist alone. Sensibility may be exaggerated in two forms. The patients may present hyperæsthesia, or exquisite sensibility of the whole cutaneous surface; so that the least touch troubles them. This is an increased abnormal sensibility—an exaggeration of the sense of touch, corresponding to the exaltation of the sensorial faculties which we have already studied. Sensibility may also be exalted in the form of pain; and this merits our most careful attention. Violent pains, precursory of a severe cerebral lesion, have often been mistaken for neuralgia. The same is the case in treating cephalalgia, supposed to be dependent on dyspepsia: and this error is more readily fallen into, as the stomach is often disordered. The diagnosis in these cases is sometimes difficult; but the duration and violence of the pain will lead to the suspicion, that there is something more than ordinary headache, and that, although the functions of the stomach are troubled at the same time, the headache is often too intense to be accounted for by the state of that organ. The patient cannot in general endure a warm room, nor the noise made by persons about him, nor even the fatigue of agreeable conversation, without suffering an aggravation of his headache. The paroxysms are sometimes accompanied with vomiting, and sometimes with violent beating in the head. If with these symptoms we remark paleness of face and weakness of pulse, and if active measures have been employed without benefit, we are led to suspect the presence of organic lesion.¹ Painful cramps are not unfrequent. Portal has seen patients who suffered severely from cramps in the legs before an attack of apoplexy.

Cutaneous sensibility presents other singular modes of perversion. A case is related of a man who, several months before being attacked with apoplexy, experienced from time to time an absolute loss of sensibility on five or six isolated points of the skin of the thorax, each of about the size of a five-franc piece. Here the skin might be pinched without causing any pain; beyond, the sensibility was perfect. These partial abolitions of sensation were not constant. On some days there was not the least diminution of sensibility; then suddenly, and simultaneously, it was annihilated in the isolated portions. Such unusual modifications of functions directly dependent on the brain, ought to furnish us with arguments in favour of the possibility of moral and instinctive perversions, and of their dependence, not on the corruption of the moral faculty itself, but on a latent pathological condition of the organ. Hence arises the doctrine of irresponsibility.

It is in the life of relation that indicatory signs are especially to be looked for. At the initial period of severe cerebral disease, organic life reveals few or no disturbances. The symptoms which may exist under this head only acquire value in connection with those which are derived from the life of relation. The brain must be much affected to produce changes in the nutritive function. Excepting sleep, which is on the confines of animal and organic life, there is not in the latter any essential functional disturbance. In the initial period, most patients have lost the power of sleep, or, if this function be performed, it is rather a fatiguing drowsiness than refreshing sleep. The digestive functions present no other special disorder than obstinate constipation, which is often difficult to be overcome by drastics. The eyelids sometimes become œdematous; and, in some subjects, attacks are preceded by small effusions of blood, even in the tissue of the conjunctiva. The secretions are but little altered. The urine is sometimes highly albuminous; but this is a subject for further researches.

In subsequent communications, Dr. Devay proposes to treat of the etiology and treatment of incipient cerebral affections.

¹ ABERCROMBIE. Diseases of the Brain, p. 453.

SURGERY.

REMOVAL OF NASAL POLYPI.

Dr. D. McRuer, of Bangor, Maine, has been in the habit, for some years, of employing the following method for the removal of gelatinous and soft polypi of the nasal passages.

A piece of catgut is passed from the nostrils to the mouth, to which is fastened a piece of soft and dry sponge, corresponding in size, when firmly compressed, to the narrowest part of the nasal passage; it is then gently drawn forwards by the posterior fauces through the nose, and, in Dr. McRuer's experience of at least ten cases, it has never failed to bring with it all the morbid growths much more effectually and easily than could possibly be accomplished by the old methods of forceps, ligature, etc. [*Trans. of Amer. Med. Assoc.*, vol. iii, 1850, p. 361.]

DISPLACEMENT OF HARD CATARACT BY LATERAL TRACTION.

Professor PANCOAST, of Philadelphia, describes the following operation for the removal of hard cataracts, which he says he has practised in about twenty cases during the last two years, with no permanent failure, and with very little, or generally no apparent pain or inflammation.

"The removal of the opaque lens by the common couching process, when it is found too hard to admit of division without rolling on its axis, is, I believe, admitted to be greatly superior, in its general results, to any other process. But the success attending this mode of operation is not by any means so great as could be desired. In the hands of the most skilful operators, complete success is not obtained, perhaps, in more than six cases out of seven, the general average being infinitely below this. The causes of failure may be said to consist in the subsequent re-elevation of the cataract; in the violent rupture of the delicate mechanical connexions of the inner tunics of the ball made at the time of operation; in the injury of the iris and ciliary processes inflicted by the needle, or caused by the pressure of the lens, couched improperly so as to press against these sensitive and probably muscular structures; in a severe disorganising inflammation speedily following the operation, or one of a more chronic character, which finally leaves the retina amaurotic.

"I keep the iris, for several days previous to the operation, thoroughly dilated by the application of belladonna. I puncture the sclerotic coat at a distance nearly equal to the diameter of the lens behind the margin of the cornea.

"The needle I employ is modelled from that of Scarpa, but with a longer and more sudden curve, and reduced to the smallest size allowable, in order to have it to pass through the sclerotic coat, so that I may, with its diminished bulk, disturb as little as possible the interior structures of the ball. A curve of the needle, almost amounting to a rectangular turn, I deem indispensable. The needle, after it has entered the hyaloid humour, is carried forward in the usual manner, so as to break between the edge of the lens and the ciliary body into the aqueous chamber, at a point where the hyaloid tunic alone, in all probability, the posterior wall of that chamber; and in doing this the ciliary processes or the iris need not be touched. The needle, after being made to divide the capsule of the lens in the usual manner, is to have its hooked part sunk into the centre of the lens. The lens, instead of being pressed down as in the ordinary process of couching, is to be gradually drawn horizontally backwards, through the same track by which the needle has passed, to the place of puncture made in the sclerotic coat. The handle is then to be depressed, and the needle detached from the eye. By this process the eye is as little disturbed as possible, and the lens rests in the interior of

the hyaloid tunic, and not in contact with either one of the more delicate structures of the ball, the iris, the ciliary body, or the retina, and with no tendency to resume its old position.

"In the same way, and with the same success, I have several times displaced secondary capsular cataracts. If the lens proves to be soft, it cannot, of course, be displaced, but may readily, with the same needle, be broken up in its bed. Occasionally, where the lens has been large, I have failed in drawing it horizontally backwards, in the gap made by the needle, and have been obliged to couch it in the usual manner. But in the hard cataracts of old persons, the kind that we have perhaps most frequently to deal with, and which are usually diminished in size, the displacement by this process, with a needle of the kind above described, will be found an easy and satisfactory operation." [*Transactions of American Medical Association*, vol. iii, 1850, p. 365.]

OVARIOTOMY: RULES FOR THE OPERATION.

Mr. J. G. Wilson lays down the following rules for the operation. 1. To make as small an incision as possible. 2. To draw out only as much of the cyst as could be extracted readily, and without displacement of the other contents of the abdomen. 3. To endeavour to keep the wound always filled with the cyst, so that neither air nor fluid should be admitted into the cavity of the abdomen. 4. To cut off the cyst, not close to the wound, but from one and a half to two inches beyond it, so that when the portion of cyst has been removed, the cut margins could be carefully examined, and the vessels secured. 5. To secure each vessel in the cut margin of the cyst separately by fine silk, and to cut off both ends close, so as to have no ligature hanging from the wound. 6. To close the external wound as quickly as possible. [*Prov. Med. and Surg. Journ.* Jan. 22, 1851.]

TANNIN IN OPHTHALMIC DISEASES.

M. HAIRION of Louvain has a very high opinion of Tannin in eye-diseases. The following remarks by him are quoted from the *Journal de Médecine et de Chirurgie Pratiques* for October 1850.

Tannin has, probably, been only used in catarrhal ophthalmia, in the proportion of one part to 120 of water; but the want of efficacy of this solution has made it fall into almost complete disuse. For more than five months, I have employed tannin in the form of pomade, in thick mucilage, in fine powder, and especially in concentrated solution (one part to three of water). The affections in which it has proved most successful have been acute and chronic blennorrhœa, œdematous swelling of the conjunctivæ, vegetating granulations, vascular and ulcerative affections of the cornea, and especially pannus, which has been cured, in some cases, with astonishing rapidity.

Tannin has been justly styled the styptic *par excellence*; its local mechanico-chemical action renders it highly useful in ophthalmology, whether to retard muco-purulent effusion of the conjunctiva, to combat the relaxation of that membrane, to obtain the obliteration of cellulo-vascular productions, or to diminish dilated or newly-formed vessels; or, by producing coagulation of the plastic fluids, to accelerate the cicatrisation of ulcers of the cornea, strengthen its softened tissue, and prevent its projection or laceration.

This remedy is free from the objections which may be urged against other astringents. Its application is not painful, it produces no severe reaction, and leaves no caustic marks, nor indelible incrustations.

Tannin has been employed in the circumstances indicated above, frequently with signal success, sometimes without advantage, never with injury.

MATERIA MEDICA AND PHARMACY.

DUTCH LIQUID AS A LOCAL ANÆSTHETIC.

M. ARAN has recently communicated to the Academy of Medicine in Paris a paper on Local Anæsthesia. The following are his conclusions, given in the *Gazette Médicale de Paris* for 23rd November 1850.

1. All general anæsthetics (the ethers, chloroform, Dutch liquid, aldehyde, benzine, etc.) possess also the property of inducing local anæsthesia.

2. The energy of the local anæsthetic power is in an inverse relation to the volatility of the substance. This explains why Dutch liquid is superior, as a local anæsthetic, to all others, why chloroform is better than ether, and acetic ether than the other ethers.

3. Some anæsthetics, as the ethers, aldehyde, and benzine, produce no irritation when applied to the skin; others, again, are more or less irritating. Chloroform produces, in small quantity, a burning sensation, and may even produce vesication, if the quantity be greater, and contact more prolonged. Dutch liquid is irritant; but infinitely less so than chloroform.

4. The local anæsthetic action of Dutch liquid continues longer than that of other substances, even when only from fifteen to thirty drops are applied to a painful part. It only produces slight stimulation, and has a slight ethereal odour, more agreeable than that of the ethers, aldehyde, or benzine.

5. To obtain local anæsthesia, from fifteen to thirty drops are to be dropped on the painful part, and the whole covered with a wet compress and a piece of waxed cloth (or oiled-silk). This succeeds in most cases, where local anæsthesia is indicated.

ELIMINATION OF ARSENIC IN ARSENICAL CACHEXIA.

The *Brit. and For. Med.-Chi. Review* (Jan. 1851) quotes the following remarks of M. HANNON, from the *Revue Médicale*, vol. i, 1850, p. 754.

By Arsenical Cachexia is meant that special deterioration of the economy, which those who have absorbed into their system a certain quantity of arsenic undergo, and which is of more frequent occurrence than is supposed. The health of many workmen in the trades in which arsenic is employed is thus injured, as is that of children by sweetmeats coloured by arsenite of copper. So, too, after the injurious employment of arsenic in medicine, and the treatment of cases of poisoning by emetics and antidotes, the patient is never cured until the arsenic has been expelled from the economy. It will remain in the system, until it has been rendered soluble by combination with some body, and thus eliminated. M. Hannon believes that *sal ammoniac* effects its elimination, as completely as the iodide of potassium has been shown by Melsens to eliminate lead and mercury. He believes, too, that arsenic may be prevented from accumulating in the economy by combining this substance with it.

ALOIN: THE CATHARTIC PRINCIPLE OF ALOES.

The Messrs. T. and H. SMITH of Edinburgh (to whom pharmacy is indebted for many discoveries and improvements), have succeeded in separating from aloes a crystalline substance possessing the characteristic effects of the crude drug; and, which from a perusal of the paper before us, we think the authors correctly regard as the cathartic principle of aloes. The history of this discovery is given in the *Edinburgh Monthly Journal* for February 1851; and an account of the chemical characters of Aloin is contained in a paper by Dr. Stenhouse in the *London, Edinburgh, and Dublin Philosophical Magazine* for Dec. 1850. Some of the chemical properties of aloin are very remarkable.

The action of doses of aloin on the human body is thus described by the

Messrs. Smith : "The first trial was made with half a grain. It acted twelve hours after being taken, in the manner that so characteristically distinguishes the action of aloes. The same quantity was again given to two healthy young men, with a similar result ; except that in one about twenty-fours elapsed before its operation. In the next two cases, one grain failed to act ; but in one of these, the dose having been increased to two grains, a very strong operation was the consequence. In a case where four grains were given, the person, a patient of Dr. Robertson, Physician to the Edinburgh Royal Infirmary, had been getting one-quarter grain doses of elaterium with little effect. The operation in this case was rather violent. In numerous other cases in which it was tried, it invariably operated in doses of from one to two grains. The result of these trials was the removal from our minds of every doubt of the crystalline body yielded by the aloes being that on which its cathartic action depended, being, in fact, the active principle of the drug."

DORVAULT ON IODINE AND ITS COMPOUNDS.

M. DORVAULT is a Parisian drug-vendor, and not a physician ; a circumstance which greatly lessens the value of his monograph, in so far as it relates to the therapeutic value of Iodine and its compounds. Nevertheless, it has merit as a compilation ; and there are in it some good remarks upon the chemical and pharmaceutical departments of the subject : and these are pretty fully noticed in the *British and Foreign Medico-Chirurgical Review* for January 1851, p. 91.

The *modus operandi* of Iodine is thus announced by the author : "Iodine is a specific fluidifier, and every morbid affection recognising for its cause or effect a humoral coagulation, more or less plainly indicates its employment." It has this advantage over the alkaline fluidifiers, that, while it fluidifies the fibrin, it spares the globules.

The *Iodide of Potassium*, M. Dorvault thinks, has none of the defects, and embodies all the excellencies of iodine. He believes that it is in this form that it exists in the marine plants and animals in which it is found." The system, having once given admission to the iodide, discharges it with remarkable rapidity and completeness. Scharlau, of Stettin, recovered daily from the urine 345 of the 350 centigrammes administered. Kramer found that, after employing it for fifty days, six suffered from its elimination. Marchal (de Calvi) found it in the urine in from twenty-five to sixty minutes, after only a grain had been given. Of 15 grains, 0.883 parts were recovered from the urine in thirty-six hours, leaving only 0.117 to be accounted for."

NEW PREPARATION OF THE PHOSPHATE OF IRON.

At a late meeting of the Medical Society of London, Dr. ROUTH exhibited two specimens—one solid, the other fluid—of phosphate of iron dissolved in metabasic phosphoric acid in a boiling state, and allowed to cool. The solution was of a semi-transparent, greenish, or slaty hue. If exposed to the air for a day, it hardened ; but could be made at once into pills by being mixed with liquorice powder or flour. The compound was soluble in any proportion of water, and free from any nauseous inky taste. It appeared better adapted than any other preparations of iron for cases of anæmia and debility brought on by venereal or other excesses, over-study, and other depressing diseases in which there was a prevalence of nervous symptoms, and a large quantity of phosphates voided by the urine. It did not gripe or constipate. The dose was gr. i or ij three times a day. [Abridged from *Medical Times*, Jan. 25, 1851.]

THE HOSPITALS OF LONDON. No. III.

BY DR. CORMACK AND DR. SEMPLE, ASSISTED BY NUMEROUS REPORTERS.

BETHLEM HOSPITAL.

PHYSICIANS. Dr. Monro ; Sir A. Morison.

SURGEON. W. Lawrence, Esq.

RESIDENT MEDICAL OFFICER. Dr. W. Wood.

THIS ancient institution (one of the first, if not the oldest, asylum for lunatics in Europe) was founded in 1247, during the reign of Henry III, by Simon Fitzmary, a sheriff of London, at Bishopsgate, when it was designated the Priory of Bethlehem. At the dissolution of the religious houses, the property was seized by Henry VIII, who in 1547 granted the Priory, with all its revenues, to the Corporation of London ; from which time, it was appropriated as a hospital for the cure of lunatics. Owing to the limited income the institution possessed, the usefulness of this charity was necessarily circumscribed, until the year 1675 ; when, by the liberality of benevolent individuals, a splendid building was erected in Moorfields for the reception of 152 insane patients. Tradition reports that the design was taken from the Tuileries ; which so incensed the "grande monarque", Louis XIV, when he heard his regal château had been made the model of a mad-house in London, that he ordered a plan of St. James's palace to be taken for offices of the meanest nature. Over the gates of the old hospital, constructed in Moorfields, the two celebrated statues were placed of Melancholy and Raving Madness, sculptured by Caius Gabriel Cibber, the father of Colley Cibber the comedian ; these are still seen in the vestibule of the modern structure in St. George's Fields, Lambeth.

Notwithstanding the addition of wings to the original building in Moorfields, it was found inadequate to the increasing claims made for admission within its walls ; hence, in 1812, the first stone of the present edifice was laid, to contain 198 lunatics. In August 1815, the new hospital, being completed, was opened for the reception of patients ; nevertheless, like the old institution in the city of London, it was soon found inadequate for the wants of an increasing population. The charity having now, however, ample funds at their disposal, the governors resolved to build additional dormitories for 166 inmates ; these were accordingly commenced in July 1838, and finished about two years afterwards. Although the accommodation, afforded in the new hospital, was thus made considerably greater than previously, two other wings, chiefly for convalescent patients, were added in 1845 ; whereby, also, a better classification of the lunatics could be accomplished. Along with these additions, the central dome, which now towers above all the neighbouring buildings, was erected, to serve as a chapel for patients and residents.

In consequence of the various additions thus made to Bethlem Hospital, the institution is capable of accommodating 450 inmates ; although the average number of patients, usually under treatment, seldom exceeds 400, including the criminal and the incurable lunatics.

The medical staff of the hospital consists of two physicians, viz., Dr. Monro and Sir Alexander Morison ; one surgeon, Mr. Lawrence ; and a resident medical officer, Dr. Wood, who alone resides on the premises. Consequently, during twenty-two out of the twenty-four hours of every day, on that gentleman rests the responsibility of superintending the medical treatment ordered by his superior officers, for so large a population ; as there are neither house-

surgeons nor resident pupils, as in many foreign lunatic asylums, or even some English establishments.

Bethlem is a hospital for the cure of mental diseases, not an asylum for lunatics. Although a limited number of incurable insane patients now reside within its walls, in consequence of a valuable estate in Lincolnshire having been left for the express purpose of maintaining incurable and dangerous lunatics, a large proportion of the patients under treatment are recent cases, whose mental malady has not been of long continuance; and no lunatic is admitted who has continued more than one year insane. In consequence of this regulation, the annual number of admissions is generally considerable: and the character of the maladies, affecting the patients under treatment, is more acute, and often exhibits very different types of disease from those usually manifested by the inmates of county lunatic asylums.

During the year 1850, the number of curable lunatic patients admitted into Bethlem Hospital, was 344, of whom 135 were males, and 209 females; thus giving a preponderance of 74 in the latter sex, or 54 per hundred. The number of patients discharged cured during the same period, amounted to 197, consisting of 74 men and 123 women; being at the rate of 57 per cent. of cures, which forms a high ratio, and is considerably beyond the amount discharged convalescent in previous years. Amongst the curable patients, the number of deaths was 31, which exceeded the usual average. This arose chiefly from the circumstance, that last year many individuals were received into the house almost in a dying state, through motives of charity. Much relief was thus given to the relatives and families of the afflicted sufferers, as well as comfort to the patients themselves. Besides the 31 deaths now enumerated, four incurable and six criminal lunatics died in 1850; so that forty-one is the total number of fatal cases during the past year.

Speaking generally, 13 of the total deaths were classified as the immediate consequence of disease of the head and nervous system, three of which arose from general paralysis. This fact deserves notice, seeing that the malady is considered of less frequent occurrence in England than on the continent; especially if London be compared with Paris. Sixteen patients died from affections of the thoracic organs; of whom six were carried off by phthisis, and three by that rare form of disease,—except amongst the insane,—gangrene of the lungs. Respecting this unusual morbid change of structure in the respiratory organs, it may be interesting to mention, that the three instances all occurred in male patients; and as two had been only four weeks in the hospital, the other about eight months, the mental disease, consequently, had not likely been of long standing; whilst neither of the patients were old men, one being 45, another 41, and the third in his thirtieth year. *Exhaustion* is reported as the cause of death in nine cases. This expression is too indefinite; and might, we think, be generally superseded by more precise phraseology in a hospital report regarding disease amongst lunatics.

Another interesting feature connected with the insane patients admitted during the last year into Bethlem Hospital, is *the apparent cause which produced mental disease*. This constitutes an important subject of investigation in all complaints, but especially in those of the mind; and as minute inquiries are always made respecting the above point, when patients enter this institution, much curious and instructive information is often obtained.

As it would be incompatible with the present brief sketch of Bethlem Hospital, to enumerate every particular cause producing insanity in the three hundred and forty-four patients admitted during the year 1850, a short summary, with a few illustrations, will suffice to show the chief influences which appeared to produce the attacks of mental alienation. Speaking generally, one half of the cases, in both sexes, were ascertained to have arisen from moral causes. Anxiety appearing the most frequent influence;

twenty-six women and twenty-two men being so classed. Grief at the death of friends was reported to have produced insanity in eighteen females, but in only two men. Love caused madness in twelve females; but not a single instance occurred amongst the male patients; whilst religion was assigned as the apparent cause of mental disease in eight women and in six men. Various other moral agents might be also enumerated, which, however instructive, would be tedious to particularise; nevertheless, one or two curious examples of the powerful effect often produced upon weak human minds by transitory influences may be mentioned, as they show how easily the mental faculties are disordered, and sometimes even completely upset, by temporary impressions, doubtless strongly acting at the time upon the nervous system, and a susceptible constitution. Thus, two men became mad from the fear of being attacked by cholera, and one from political excitement. Two women, on the other hand, were deprived of reason from living with insane persons; one from attending a singing-class; another female lost her senses from terror at the revolutionary disturbances in Paris; whilst a fifth became insane from the excitement of travelling, for the first time, by a railway.

Amongst the physical causes producing insanity, intemperance was reported as the most frequent, especially in men, nine cases having been met with in that sex, while eight occurred amongst the female patients, although the latter were more numerous. Bodily illness produced madness in thirteen women, but only five instances occurred amongst the male inmates. Eight cases of puerperal insanity were admitted, and three arose from lactation; four from change of life; two from uterine disturbance; and one female was reported to have gone mad from her recent marriage. Again, amongst the male patients, four were stated to have become lunatics from solitary sexual excess; three from exposure to a hot sun; one from the disappearance of an accustomed eruption; another in consequence of an attack of cholera; whilst one poor fellow became insane from severe sea-sickness. Lastly, amongst the whole 135 male lunatics admitted, 39 cases were ascertained to have hereditary tendency to insanity, which makes about 29 per cent.; whereas, amongst the 209 female patients, 67 exhibited hereditary tendency to mania, being at the rate of 32 per cent. on the admissions; thus proving that mental diseases, besides being more frequent in women, are likewise transmitted to the offspring in a higher proportion amongst them than in the opposite sex.

In addition to the above summary of the chief causes which apparently produced mental alienation in the various individuals admitted into Bethlem Hospital, it may be interesting to mention, especially as the frequently severe character of the cases is thereby manifested, that more than half the male patients, or 76 of the 135 admitted, were classed as violent cases, most being likewise dangerous either to others or themselves. Farther, amongst the 209 female lunatics also admitted during 1850, nearly one-half, or 100, were enumerated in the same category, of whom 90 were decidedly dangerous lunatics. It is also worthy of special notice, that 58, or nearly one-half of the male patients received, were classed as suicidal; of whom 14 had actually endeavoured to destroy themselves previous to their admission. Again, amongst the 209 female lunatics, almost one half, or 103, were ascertained to be suicidal patients, of whom 28 had attempted suicide prior to becoming inmates of this establishment.

The above interesting facts are now briefly mentioned, not only to shew the forms of mental disease generally met with in the curable wards of Bethlem Hospital, but also to prove, that unlike most public receptacles for lunatics, particularly county asylums, this institution is, in great measure, appropriated for the reception of recent cases of insanity, and therefore constitutes a hospital for the cure of insane patients, rather than a refuge for

the hopeless victims of that terrible calamity. Hence, those who have remained more than one year within its walls, without receiving benefit, are then discharged as uncured, in order to be replaced by others more recently attacked with insanity. Although relatives may be sometimes inconvenienced by having their afflicted friends thus sent home before they are convalescent, and with perhaps slighter hopes of improvement than existed previous to admission, it ought to be always remembered that, during one year at least, and occasionally even for fifteen or eighteen months, such patients have been maintained and treated gratuitously; and although they no longer receive the benefits of this charity, other fellow-creatures equally, or even more severely afflicted, then occupy the recently evacuated dormitories. By this arrangement, a larger number of lunatics are annually received, than could be otherwise admitted; and in this way the utility of the institution becomes more extensively diffused. As every English county now has, or ought to possess, an asylum for the reception of its lunatic poor, the regulations in force at Bethlem Hospital render its benefits more generally useful, notwithstanding instances may occasionally occur, where a rigid adherence to the spirit of the rules may prove inconvenient to individuals.

Bethlem, being an hospital appropriated chiefly for recent cases of insanity, whilst the criminal and incurable lunatic patients also supply numerous illustrations of chronic and protracted instances of mental disease, supplies an excellent field for the study and investigation of mania in every variety. Until recently, medical students could nowhere else in the metropolis obtain clinical instruction and practical knowledge respecting the treatment of insanity, except at this hospital. But even here, owing to the very high fee charged for permission to attend the physicians, and as only three pupils could be entered at the same period, the doors of the institution became almost wholly shut to the general body of the profession; so that few students, excepting those specially intending to treat mental diseases, were induced to avail themselves of the means of instruction here afforded to them.

About nine years ago, Dr. Webster, then a governor of the hospital, brought the subject of allowing medical pupils greater facilities, when attending in the wards of the institution, before the managing authorities. Considerable discussion ensued upon his proposition, which it now seems wholly unnecessary to detail. Nevertheless, the agitation, thus commenced, ended ultimately in throwing open the portals of this large charity to all medical students who might feel anxious to obtain knowledge respecting the treatment of insanity, and to witness the practice of the physicians; the admission fee for each term—extending to about four months—being reduced to three guineas; whilst, in the summer season, clinical lectures are given by one of the medical officers. During last year, Dr. Monro lectured to the pupils, of whom generally about ten attended very regularly. In the ensuing summer term, Sir A. Morison will probably undertake that duty, as he did during 1849. Hence, no professional person can complain that he is unable to learn the nature, symptoms, treatment, and pathology of mania; for not only Bethlem Hospital, but St. Luke's, and the Hanwell Asylum, are now accessible to properly qualified applicants.

Notwithstanding these facilities for studying insanity, the numbers likely to take advantage of the ample opportunities at present available, will not, probably, be numerous, until the licensing medical corporations require from all aspirants for their honours, practical proofs that they are conversant with diseases of the mind as well as of the body. Formerly, it was sometimes said to be useless to insist on candidates for diplomas from the Colleges possessing any knowledge of mental diseases, as no place was open for obtaining such

knowledge. Now, others even assert it to be unnecessary to enter hospitals for the insane; as the Colleges do not examine on insanity, and there is plenty to learn besides. Such reasoning may be agreeable to the inactive student; but it only shews the necessity which exists of medical colleges, and public bodies, altering their system, especially in reference to medical officers entering the army and the East India service. Indeed, a rumour prevails, that an intention exists of requiring from the future surgeons appointed to the Honourable Company, a certificate of having attended at a public lunatic institution, where they have had proper opportunities of acquiring an adequate knowledge of the management of mental diseases. This would be a very judicious proceeding; and however necessary for those filling military medical appointments, it is still more essential for civil practitioners; especially as they are liable, at any time, to be called upon to attend cases of madness, and sometimes on an emergency; which duty they should be as much qualified to undertake, as to treat any severe attack of fever, an accident, or accouchement. Besides this, if both legally and medically conversant with the subject of insanity, the physician or surgeon would be then fully prepared to enter courts of justice, when called as a witness in cases *de lunatico inquirendo*. He would then be able both to speak confidently, as well as scientifically, respecting the symptoms and condition of the individual under investigation, instead of being sometimes brow-beaten by astute barristers, who even consider it a great triumph if they can invalidate the evidence of "doctors", by making them give obscure answers to difficult questions, and so puzzle the court and jury through mystifications. This an experienced practitioner ought to be fully qualified to clear up or explain, with credit to himself, and with advantage to the afflicted lunatic.

Elaborate and varied statistical data are annually prepared, containing many instructive particulars respecting the curable patients under treatment, during the year. These tables were commenced, in their present form, in 1843, by Dr. Webster, who arranged the plan adopted, and compiled the different returns for that and the succeeding year, when they were printed for the use of the governors, along with the Report of the General Committee of Management. Exactly parallel statements have been drawn up regularly ever since they were commenced, more recently by the resident medical officer, Dr. Wood, and these are now distributed to the governors along with the Physicians' Annual Report. As it would be tedious to enumerate the different subjects embraced in these official documents—amounting to thirty-five in number,—the reader need be only now informed, that they contain, amongst other particulars, the condition of the inmates admitted, their former occupations, the assigned causes of their disease, and whether dangerous, violent, or suicidal patients. The symptoms and treatment, also the apparent cause of death, the numbers discharged uncured, or sent home convalescent, are carefully recorded. The influence which age, season of the year, duration of the attack previous to admission, the patients' domestic condition, degree of education, nativity, and religious persuasion, have exercised upon the disease, are likewise registered; besides other data of much value to the student and medical practitioner. As these tables have now been continued, on the same model, for eight consecutive years, and already form a large collection of important information, they will every day become of greater value to psychologists.

UNIVERSITY COLLEGE HOSPITAL.

The following is the Medical Staff of UNIVERSITY COLLEGE HOSPITAL.

PHYSICIANS. Dr. W. H. Walshe, *elected* 1849 ; Dr. Parkes, *elected* 1849 ; Dr. Garrod, *elected* 1850.

ASSISTANT-PHYSICIANS. Dr. Jenner, *elected* 1849 ; Dr. Hare, *elected* 1850.

OBSTETRIC PHYSICIAN. Dr. Murphy, *elected* 1842.

SURGEONS. R. Quain, Esq., *elected* 1842 ; John Erichsen, Esq., *elected* 1850.

ASSISTANT-SURGEONS. John Marshall, Esq., *elected* 1848 ; W. Cadge, Esq., *elected* 1850.

CONSULTING OPHTHALMIC SURGEON. R. Quain, Esq., *elected* 1850.

OPHTHALMIC SURGEON. T. Wharton Jones, Esq., *elected* 1850.

DENTAL SURGEON. Durancé George, Esq., *elected* 1844.

APOTHECARY. J. T. Clover, Esq., *elected* 1848.

THE OBSTETRIC DEPARTMENT, which is presided over by Dr. Murphy, is devoted to the superintendence and care of Pregnant Women until they are delivered ; to the treatment of Diseases of the Womb and its appendages ; and to the Diseases of Children.

Three days in the week—Monday, Wednesday, and Friday—are set apart for the purpose of giving letters for attendance to pregnant women. Their names, residences, ages, etc. are entered according to the following formula.

No.	Date.	Name	Age.	Residence.	Health.	Catamenia.			No. of Children.	Mis-carriages.	Letter sent to	General observations.
						Age at first appearance.	Interval.	Last appearance.				
1	Dec. 27	A. B.	25	15, Warren-st.	Good	15	Four weeks.	April 22	6	2	Mr. L.	

To the woman is then given a letter, directed to the gentleman who is appointed to attend to her. If he is willing to do so, he gives the patient one-half of the sheet for her guidance, and keeps the other ; if not, the letter is brought back to be directed to another. When the woman is delivered, another formula is filled up, and returned to be entered on the register.

No.	Date of delivery.	Duration of labour.	Placenta expelled.	Child.					Mother.	Attended by.	Duration of pregnancy.	Remarks.
				Position.	Sex.	Living.	Dead.	Putrid.				
1	Jan. 27	10 hours	10 min.	1st V.	M.	1	0	0	1	Mr. L.	280 days	

By this means, with other more usual particulars, an important collection of facts in reference to the duration of pregnancy may be obtained. The interval between the last appearances of the menses and the delivery of the patient is always accurately noted, when the information can be accurately obtained. The women are all attended at their own houses : they receive medicines for a fortnight after delivery. The number of patients who received letters during the year 1850 was 788.

Two obstetric assistants are appointed for periods of six months. The senior aids Dr. Murphy in the treatment of diseases of the womb, both in the out and in the in-patients. He also assists, when called upon, in cases of difficult labour. The junior assistant is chiefly engaged with the midwifery cases. He is first called upon in any difficulty in delivery, when, if necessary, he sends for the senior assistant, or for Dr. Murphy. He assists in keeping the register of midwifery patients, and in the performance of any minor operations that may be necessary.

Patients afflicted with diseases of the womb, of whom there are about 300 in the year, are attended as out or as in-patients; the latter occupying a ward in the hospital devoted to these complaints. The out-patients attend on Tuesdays, Thursdays, and Saturdays. Thursday is the day for the private examination of uterine diseases. A large proportion, at least 70 per cent., are cases of chronic inflammation in one form or another. Their frequency is nearly in the following order: 1. Inflammation and ulceration of the os and cervix uteri (about 60). 2. Inflammation of the ovaries, generally the left (about 30). 3. Inflammation of the body of the womb, accompanied by highly hysterical symptoms (10). Each of these forms may merge into the other, but they generally observe the above order; inflammation of the neck extending to the ovary and body of the womb, and inflammation of the ovary to the body: but the reverse, extension of the inflammation of the body of the uterus or of the ovary to the os and cervix uteri, has not been observed; though there is no reason why this should not happen. The speculum is used in all cases of inflammation and ulceration of the os and cervix uteri. The local remedies employed are chiefly nitrate of silver, and sometimes potassa fusa.

Inflammation of the ovaries is generally detected by pressing the inguinal space with the fingers of opposite hands, one being passed into the vagina, the other behind the linea ilio-pectinea. These patients are generally sterile. The proportion of prostitutes has not been ascertained; but ovarian inflammation seems by no means confined to them.

Of other diseases, displacements of the womb are next in frequency. Prolapsus is the most common; then retroversion or retroflexion, anteversion, and sometimes anteflexion. In the diagnosis of these affections, Dr. Simpson's sound is used, except when pregnancy is suspected. In the treatment, Dr. Murphy sometimes uses no instrument, contenting himself with replacing the uterus by the hand. In other instances (of retroversion) he passes a gum-elastic ring-pessary back to the *cul-de-sac* of the vagina, so that, when the sound is withdrawn, the womb cannot fall so far back as before. The uterine supporter is seldom used, having been found to cause inflammation.

Next in order of frequency are fibrous tumours, with a few cases of polypus, carcinoma, and, very rarely, corroding ulcer and cauliflower excrescence.

Disordered menstruation is so frequently only a symptom of other diseases, that it is difficult to separate it. For instance, dysmenorrhœa is the constant symptom of stricture of the cervix uteri, caused by a spasmodic contraction of the fibres between it and the body of the uterus. This is generally the result of chronic inflammation, but sometimes it is congenital. It is relieved on the same principle as stricture of the urethra, by dilatation with metallic bougies.

Veneral cases in the mother are sent to the surgeon. Copper blotches, and other venereal eruptions, are often met with about the nates and testes of infants.

The diseases of children are chiefly those of the skin, scrofula, and chronic disorders, the result of innutrition. The acute diseases, inflammation and fever, are less numerous, and the patients only attend at the commencement of the attack, as they require the aid of a dispensary, where the child may be attended at home. The number of these is about 200 in the year.

NORTH LONDON EYE INFIRMARY.

CONSULTING SURGEON. John Dalrymple, Esq.

PHYSICIAN. Dr. Twining.

SURGEONS. White Cooper, Esq. ; G. D. Pollock, Esq. ; John Pyle, Esq. ; H. B. Norman, Esq.

APOTHECARY. Mr. Burcham.

An interesting example of sudden recovery of sight, after an operation for cataract, occurred recently in a patient of Mr. White Cooper. An elderly female, of rheumatic constitution, had undergone three operations for solution ; but, as a hard nucleus still obstructed the pupil, she had no sight. It was intended to depress this nucleus, but accident rendered such a step unnecessary ; for, whilst doing some household work, the woman felt an acute pain shoot through the eye and head, and instantly saw. The obstructing body had fallen down behind the iris, leaving the pupil clear. For ten days all objects appeared tinged with blue ; but, by quiet and some treatment, this symptom of retinal irritation passed away, and she now sees well. In 1849, Mr. Cooper saw a somewhat similar case. A cataract had been extracted from the eye of a surgeon, and, in passing through the pupil, it had left a small portion of transparent soft circumference behind ; the section healed kindly, but the soft matter becoming opaque, blocked up the pupil. The sight being thus very imperfect, he slipped when sitting down, about three weeks after the operation, and fell backwards, striking his head with force against a door. For a minute he was stunned ; but, on recovering, was agreeably surprised at the clearness with which objects appeared. As in the former case, the obstructing fragments had been displaced, leaving the pupil clear. Mr. Cooper has now under his care a good example of strabismus convergens, caused by an ulcer on the cornea. A little girl, six years of age, had a small inflamed ulcer on the lower half of the left cornea. When first seen, and for a week subsequently, the eye was perfectly straight, but the ulcer became exceedingly sensitive, and the eye turned in to avoid the friction of the lid on the abraded surface. A drop of castor oil was directed to be placed between the lids, and the usual treatment was adopted ; but although the ulcer has been healed for some weeks, the squint remains. Had the ulcer been in the centre of the cornea, the strabismus might have arisen from the natural effort to overcome the obstruction to vision ; but it is below the margin of the pupil, and consequently the sight is not interfered with.

There have been an unusual number of rheumatic and catarrhal inflammations this winter, frequently accompanied with ulceration. Bark and soda, with or without colchicum, and mild local stimulants, were the most efficacious measures.

REPORTS OF SOCIETIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

TUESDAY, JANUARY 28, 1851.

SAMUEL SOLLY, ESQ., VICE-PRESIDENT, IN THE CHAIR.

CASE IN WHICH THE CÆSAREAN SECTION WAS PERFORMED ; WITH REMARKS ON THE PECULIAR SOURCES OF DANGER ATTENDANT ON THE OPERATION. By CHARLES WEST, M.D. The patient was a young woman, aged 27, a patient of Mr. Wren of Brownlow Street, whose health had always been indifferent, but whose person was not apparently deformed, and who reached the end of her first pregnancy without manifesting any symptoms especially calling attention to the state of her osseous system, with the exception of pains of a rheumatic character, and difficulty in walking, which last became very great during the last two months of her pregnancy. When labour came on, at the end of the full period, the existence of extreme pelvic deformity was at once ascertained by Mr. Wren, in whose opinion, as well as in that of Dr. West, Dr. Murphy, and Dr. Ramsbotham, the performance of the Cæsarean section was indicated. It was accordingly performed by Mr. Skey, fourteen hours after the commencement of labour, and eight hours after the rupture of the membranes ; uterine action having been feeble from the first, and having almost ceased since the escape of the liquor amnii. The patient was, by her own desire, subjected to the influence of chloroform before the operation was begun : no difficulty was experienced in its performance, and a living female child was extracted. Very formidable hæmorrhage followed the removal of the placenta ; and the subsequent contractions of the uterus were very tardy. The patient was left in a state of great exhaustion, from which she never rallied, and died in 108½ hours after operation, apparently from the conjoint effects of the hæmorrhage during the operation, and of the shock to the nervous system. The treatment consisted in the administration of stimulants and nourishment, both by the mouth and in enemata, and the patient was kept almost throughout under the influence of opium. The body, on examination after death, presented no evidence of serous inflammation ; but the uterine wound was gaping widely, and even that of the abdominal parietes was but partially closed. The pelvis presented, in a most marked degree, all the characteristics of that deformity which is produced by mollities ossium ; the pubic bones being projected into a beak 1·2 inch in length, the width of the pubic arch being reduced to 6 of an inch, and the distance between the tuberosities of the ischia to 1·2 inch.

Dr. West then proceeded to point out the causes of the high rate of mortality among the mothers in cases of Cæsarean section, which in hospitals abroad was 79 per cent., and in this country 85·4 or 87·5 per cent. The causes were referred to four heads, and illustrated by reference to 134 fatal cases, in which the body was examined after death. The four heads were as follows : 1. Hæmorrhage ; which proceeds from a source different to that whence bleeding takes place in any other operation, and which is not capable of being arrested by the same means as suppress it under ordinary circumstances. 2. The shock inflicted on the nervous system, as well by the violent interference with the most important process that ever goes on in the organism in the same limited time, as by the injury to a part so important, and so richly supplied with nerves, as the uterus of a parturient woman. 3. The hazard inseparable from extensive injury to the peritoneum, when unblunted in its sympathies, and unaltered in its texture, as it is in cases of ovarian and other tumours, for the removal of which a similar exposure of the abdominal cavity is sometimes practised. 4. The infliction of a wound

on the uterus, at a time when, in the ordinary course of things, the processes which nature is prepared to carry on in it consist in the disintegration and removal of the tissue—processes the very reverse to those essential to the repair of injury. The author concluded that, these sources of danger being so serious, and so beyond the power of art to prevent, the rule which forbids the performance of the Cæsarean section, wherever there is a reasonable probability of accomplishing delivery by the natural passages, is founded on solid grounds, and ought to be adhered to.

TUESDAY, FEBRUARY 11, 1851.

DR. ADDISON, PRESIDENT, IN THE CHAIR.

CASE OF CÆSAREAN SECTION. By HENRY OLDHAM, M.D. The subject of this case was a rickety, deformed girl, aged 23, unmarried, pregnant with her first child, and seven months gone in gestation when first seen by Dr. Oldham. On examination, the pelvis was found to be reduced to two inches in its conjugate diameter, and the uterus was much anteverted. The membranes were punctured for the induction of premature labour, in a few days after she was seen, September 23rd, 1850. On the following morning, the left arm was found in the vagina, but labour did not come on until nine A.M. on the 26th. In twelve hours, the os uteri was dilated, and then some attempts to deliver her were made. The child could not be turned; but, by drawing down the protruding arm, which, from commencing decomposition, soon gave way, and pressing the abdomen from below, the head was brought over the brim, and was at once perforated. For four hours, the crochet was employed, both inside and outside the head, the bones of which were completely torn up, but without drawing it through the brim. At this time, a new impediment was found to have arisen, from the descent of the right hand and a foot, by the side of the collapsed head, into the pelvic brim; and, on watching the effect of labour pains, all these parts were felt to be squeezed together in the narrow inlet of the pelvis, each preventing the other's descent. It was attempted to bring down either the foot or hand; but only the slippery tips of each could be touched, and they could not be moved. The patient had now been seventeen hours in labour, and it became a question for serious consideration and consultation, whether she would be able to sustain the necessary efforts for her delivery, and whether it would not be for her benefit to perform the Cæsarean section before exhaustion came on, which at length was determined on. The operation was performed by Mr. Poland, without difficulty, and with little hæmorrhage, the patient being under the influence of chloroform. The incision, five inches long, was slightly curved, and a full-sized seven months' fœtus was removed, and afterwards the placenta and membranes. For two days the patient did well; but then exhaustion came on, and she died. While she lived, she was kept under the influence of opium, and was sustained by simple cold drinks. On post-mortem examination, there were some slight traces of peritonitis near the uterus. The external opening was closed, and its edges adherent, but the uterine incision was gaping. The larger omentum was indurated and inflamed, and so drawn across the uterus, above the incision, as to prevent any discharge from the latter organ escaping into the peritoneal cavity.

Two practical questions were suggested by this case. 1st. What was the best plan to attempt to follow out in the delivery at first? 2nd. Were the complications such as to justify the Cæsarean section? With respect to the first question, one of two plans of treatment might have been adopted: 1. To induce labour, and deliver by craniotomy; 2. To allow her to go to term, and then perform the Cæsarean section. In determining in favour of the former, the author was guided by the great probability—with a conjugate diameter of two inches—of being able to deliver with the crochet, and he considered that his inability to do so arose from the complex presentation. With reference to the

second, he was induced to have recourse to the Cæsarean section, from a conviction that the patient would probably sink under the prolonged efforts at delivery; and a case was related which occurred in the Lying-in Charity at Guy's, under Dr. Ashwell, where a woman with a far less contracted pelvis died undelivered, after the powerful and sustained efforts to relieve her. It was remarked that the girl had but a feeble constitution, which would ill support so hard a trial of its powers; and the condition of the vagina was particularly noticed as retaining the marks of early age, being structurally weak and easily lacerable, and most unfavourable for a long craniotomy operation. Under these circumstances the Cæsarean section offered a speedy and sure, instead of a prolonged and doubtful delivery. It was not yet forbidden from exhaustion, or any signs of inflammation; on the score of suffering it contrasted most favourably with persistence in the use of the crotchet; and, upon the whole, it was judged to offer a better chance of ultimate success. The curve in the incision was suggested to catch the outline of the muscular fibres on the inner surface of the uterus, and so favour the closure of the wound. The scanty hæmorrhage during the operation was in a measure accounted for by the uterus being at the seventh instead of the ninth month, by the placenta being attached to the posterior wall, and the uterus being opened low down towards the cervix, where the veins were less developed. Chloroform was said to be a gain in every way, and the after-treatment by opium appeared satisfactory.

[The personal tone of the discussion makes it difficult to give with fairness to all parties a condensed account; and for that reason we are forced to omit it.]

MEDICAL SOCIETY OF LONDON.

DECEMBER 28, 1850,

J. RISDON BENNETT, M.D., PRESIDENT, IN THE CHAIR.

PHYSIOLOGICAL PROPERTIES OF PICROTOXINE. By R. MORTIMER GLOVER, M.D. The author commenced by detailing seven experiments, the animals experimented on being dogs, a she-ass, a pigeon, a frog, a rabbit, and a gold fish. The results in each experiment, and the *post-mortem* appearances, were alike, namely, retrograde movements, shown in a slight degree by convulsive twitches of the eye, head, neck, and shoulders backwards, and in an extreme degree by a regular forced retrogression, salivation, and general tremors, bloody stools, laborious breathing, rapid action of the heart, and opisthotonos. The autopsies revealed total extinction of the muscular irritability, with great heat of the muscular fibres, the thermometer rising to 115 degrees; irritability of heart, more so of the auricles than of the ventricles, both cavities being distended with black fluid blood; the lungs slightly congested; the stomach and intestines showing marks of irritation; great congestion of the brain and its membranes, especially the lower portions, the cerebellum, corpora quadrigemina, and upper part of the spinal cord, with much bloody serum in the ventricles. The dose of picrotoxine given to the dogs varied from one to two scruples; to the ass, 100 grains; to the pigeon, 4 grains; to the frog, 5 grains; and to the rabbit, 10 grains; 5 grains were placed in the water containing the gold fish, but the picrotoxine is very insoluble in water. In all these experiments it was either given by the mouth, or inserted under the skin of the axilla or groin. The author next proceeded to compare the results of his experiments with those made by M. Flourens in the removal of various parts of the brain, especially in the corpora quadrigemina and cerebellum. The resemblance, he remarked, was very striking. To prove this, a quotation was made from Cuvier's report to the Institute on Flourens' experiments, and the following conclusions were drawn by the author as the legitimate deductions from the results

of his experiments: 1. Picrotoxine has the power of determining peculiar movements and effects very similar to those described by M. Flourens as resulting from sections of the cerebellum, and perhaps of the corpora quadrigemina. He did not think, however, that the animals in his experiments were blind until just before death, if then, as in the cases where Flourens cut away the corpora quadrigemina. The iris was certainly in some cases contractile, until the symptoms became very severe, when the pupil was enormously dilated. 2. Picrotoxine also acts powerfully on the spinal cord, and generally is a narcotico-acrid poison. 3. It is not, for one of these active principles, so very energetic, that is to say, in such small doses, like conia, aconitina, etc., although a most terrible poison. 4. The animal temperature was much increased in some of these experiments, forming, in this respect, a great contrast with some facts Dr. G. observed several years ago, showing the great diminution of temperature undergone by animals slowly poisoned by the chloride and bromide of olefiant gas, chloroform, bromoform, etc. How far the increase of temperature was owing to the excitement of the nervous system, he (Dr. G.) would not decide. The peculiar movements caused by picrotoxine, Dr. Glover thought, were neither reflex nor voluntary, but should be considered a third kind of motion.

JANUARY 4, 1851.

J. RISDON BENNETT, M.D., PRESIDENT, IN THE CHAIR.

CASE OF INTERNAL STRANGULATION. By HENRY HANCOCK, Esq. [Mr. Hancock's case is contained in his article, published at p. 244 of the present number of this Journal.]

JANUARY 11, 1851.

J. RISDON BENNETT, M.D., PRESIDENT, IN THE CHAIR.

INHALATION OF VARIOUS MEDICINAL SUBSTANCES. By JOHN SNOW, M.D. [Dr. Snow's paper appears as an original article at p. 122 of this volume.]

JANUARY 18, 1851.

J. RISDON BENNETT, M.D., PRESIDENT, IN THE CHAIR.

ON THE ASSIMILATIVE FORCE IN RELATION TO HYPERTROPHY AND ATROPHY. By ALEXANDER HENRY, M.D. The following is the summary of the author's remarks on hypertrophy. 1. In all cases of hypertrophy, we have to consider the assimilative force of the tissues as the essential element. 2. In certain instances, this force seems sufficiently intense to appropriate a steadily supplied increase of blood, without being heightened by any stimulus. 3. In several tissues in the higher animals, and in man, hypertrophy takes place only under the stimulus of functional exercise; and an excessive supply of blood will not produce hypertrophy, unless the assimilative power of the part be thus stimulated. In atrophy, the assimilative force was considered to be sometimes impaired from want of exercise, and sometimes from being exhausted by over-exertion. Defect of it was also considered by Dr. Henry, (following in a great measure the views of Dr. Hodgkin), to be an important pathological element in fever.

JANUARY 25, 1851.

J. RISDON BENNETT, M.D., PRESIDENT, IN THE CHAIR.

TREATMENT OF PERMANENT STRICTURE OF THE URETHIA. By ROBERT WADE, Esq. Nothing very new was contained in the paper; and nothing remarkable was elicited by the discussion.

FEBRUARY 1, 1851.

J. RISDON BENNETT, M.D., PRESIDENT, IN THE CHAIR.

USE AND ABUSE OF THE SPECULUM. By R. GREENHALGH, Esq. The author had examined a thousand women with the speculum within three years. In

a fifth of that number he had found red granulating surfaces, varying in size from a small pea to half-a-crown; and in some instances they bled when touched. In two cases, in each of which the cervix uteri was enlarged, puffy, and somewhat tender to the touch, in part covered with a large, red, and apparently granulating surface, the os uteri admitted the top of the finger; to both the potassa fusa was applied, and was followed by peritonitis: the patients ultimately recovered. Mr. Greenhalgh considered that he had used the speculum far too often, and that in reality it ought rarely to be employed. In most cases of uterine sores he preferred vaginal injections to cauterisations; and in all he thought the cure was chiefly to be obtained by constitutional remedies, such as steel with ammonia, the mineral acids, the shower bath, and hot and cold hip baths.

DR. CRISP recollected the opposition which followed the introduction of the stethoscope, upon the ground of indelicacy. The objection was valid against both instruments when they were abused, but both were employed with advantage in proper cases.

DR. H. BENNET thought that the frequency with which Mr. G. had used the speculum was not justifiable. At the Western Dispensary, with which he had been connected, the cases in which the symptoms justified the use of the speculum were, in about three years, only 300; being in the proportion of about 120 in the 4000 or 5000 women who annually presented themselves for treatment at that institution. The potassa would of course do mischief when misapplied; it cured chronic cases by substituting acute for chronic inflammation.

DR. MURPHY expressed regret at the unfair spirit in which the speculum controversy had lately been carried on. He agreed with Dr. Bennet in thinking that the speculum ought only to be used when a very strong probability existed that there was uterine disease requiring its employment. Evidence of this could generally be obtained; and the indiscriminate investigations of Mr. Greenhalgh were not to be commended. "Ulceration of the cervix", about which so much had been said, Dr. M. defined to be "a florid, red, circumscribed granular spot, such as is found in the conjunctiva or the throat. The surface is but little raised, on account of the delicacy of the membrane, and paucity of cellular tissue; but its elevation is more and more marked as the disease advances." The neck of the uterus becomes indurated, and increased in volume, causing general disturbance of the health, which cannot be fully met without local treatment. Constitutional measures should be applied at the same time.

MR. GREENHALGH stated, in reply to the above and various other speeches addressed to the Society, that he had used the speculum so extensively only for the purpose of testing its value, and testing the truth of the statements which had been made regarding the frequency of ulceration of the cervix uteri. He had not made it a matter of gain; having, with half-a-dozen exceptions, used it only on gratuitous patients.

FEBRUARY 8, 1851.

J. RISDON BENNETT, M.D., PRESIDENT, IN THE CHAIR.

ON GONORRHEA. BY JOHN CHIPPENDALE, ESQ.

FEBRUARY 15, 1851.

J. RISDON BENNETT, M.D., PRESIDENT, IN THE CHAIR.

ANATOMY OF THE URETHRA. MR. HANCOCK made the following communication:—Assisted by Mr. Hogg, he had examined, microscopically, the structures surrounding the urethra. He found that the urethra itself was not muscular, but closely invested by organic muscular fibres continuous with the muscular coat of the bladder, which consisted of two layers, an internal and an external. The external passes forwards, and extends over the outside of the prostate gland; the internal, on the contrary, accom-

panies the mucous lining through the prostrate, forming an involuntary muscular covering to the urethra in its passage through the gland. The membranous portion of the urethra is next closely invested by these muscular fibres, which cannot be mistaken for any portion of Wilson's, Guthrie's, or Santorini's muscles, the latter being voluntary, and presenting the usual striated appearance under the microscope, whilst the former are involuntary and nucleated. Continued forwards, they reach the bulb, where they divide, the one part being continued onwards to the orifice of the urethra, lying between it and the corpus spongiosum, whilst the other passes on the outer surface of the corpus spongiosum, separating it from its fibrous investment, to which the fibres adhere pretty closely. These latter are also continued forward to the orifice of the urethra, and, in their course, invest the spongy portion of the bulb, urethra, and glans penis, entering very largely into the formation of that peculiar structure found at the orifice of the urethra, and which appears to consist almost entirely of involuntary muscle and elastic cellular tissue, forming an additional sphincter muscle to those usually described as met with in various parts of the body. It will thus be seen that the corpus spongiosum urethræ lies between two layers of involuntary muscle, the one separating it from the urethra, the other from its fibrous covering; an arrangement, doubtless, exerting considerable influence over the expulsion of the blood from the corpus spongiosum when erection of the organ is no longer required, as well as over the emission of urine and the seminal fluid. After the meeting, Mr. Hancock exhibited, under the microscope, specimens of the muscular tissue just described.

MORALE AND MEDICINE IN CONNEXION WITH PHTHISIS. By THEOPHILUS THOMPSON, M.D. [This paper will appear as an original article in this volume.]

MISCELLANEOUS INTELLIGENCE.

CONVALESCENT HOSPITAL AT CARSHALTON. The Carshalton Hospital, near London, was founded six or eight years ago, by Dr. Forbes and benevolent persons, for the purpose of affording to the sick poor, and to those especially who had been discharged from the London hospitals, a temporary asylum, where they might have the advantages of good pure air, wholesome food, and a properly regulated regimen, before they returned to their laborious trades, and were again exposed to the injurious influences which surround the homes of the London artizans.

The rules of the establishment are very simple. A subscriber's letter entitles a patient to the benefits of the hospital, provided he be declared a fit subject by the London committee. A selection is necessarily obliged to be made, as the hospital is of limited size, and its funds are at present small. If the patient be eligible, he is then sent to Carshalton free of expense, and is kept there for one month. Medical attendance is provided; but the chief remedial measures relied upon are exercise in the pure air, a good diet, and the regular habits enforced in the hospital. The improvement in the health of the London workman is sometimes almost incredible: we have frequently heard individuals who had returned from Carshalton speak of it and of the benefit they received there, in terms of the deepest gratitude.

The advantages of such an institution as this are obvious. Our London hospitals are generally obliged to leave their work half done. The acute disease may be cured, the broken bone united, or the operation-wound neatly healed; but beyond this the case is left very much to itself. A patient cannot be kept in hospital till his constitution has thoroughly rallied from the shock, and till the nutritive functions are again performed with perfect regu-

larity and vigour. He is obliged to be sent forth, too often to return at once to a miserable and filthy den, and at once to endure, with an exhausted frame, the fatigues of, it may be, an unhealthy occupation. No wonder is it, that in this way the unfortunate artizan often sinks into a state of permanent ill-health; and when he is next admitted to the hospital, it is with an incurable disease.

No blame attaches to the medical officers of our London hospitals for this premature discharge of patients; it is impossible to retain convalescent persons in the wards when numberless applicants are clamouring for their turn. The hospital has done its part of the work, and probably done it well; but something else is wanted to confirm and ratify this work, and to secure it from the chance of its having been done in vain. The idea of a Convalescent Hospital, a few miles from London, to which such patients can be sent, was an obvious one. It has been well worked out on a small scale at Carshalton, and, as we have already intimated, the results have been most satisfactory.

It is now proposed to extend the application and the benefits of this institution. A new hospital is in course of erection, on a piece of ground generously given to the governors by Lord Ellesmere, and the number of patients will be considerably increased. To do this, however, funds are wanted; and it is with a view of entreating our professional brethren not to remain inactive when a scheme of such obvious utility is impeded for want of money, that we have now brought before them the nature and circumstances of this hospital.

It would be a most desirable thing to bring this Convalescent Asylum into connexion with the great London hospitals. Bartholomew's, or Guy's, or University College, should *own*, as it were, a certain number of beds, which should be kept occupied with such convalescent patients as were deemed likely to be most benefited by country air and country regimen. A small subscription from each hospital would nearly support the Carshalton Asylum, which would then become *ex officio* and completely, what it is now only partially and incidentally, a great sanitary dépôt, in which the cures begun elsewhere might be perfected, and secured from relapse. Bartholomew's and Guy's would not diminish the actual good effected in their wards, if they devoted some part of their enormous incomes to providing for their convalescent patients the most effectual means for making permanent the good which has been effected. [From *Medical Times*, February 22, 1851.]

THE FIRST-YEAR STUDENT UPON HIS ARRIVAL IN LONDON. "Where shall he live? What shall he do? Who will become his friends and future companions?

"The moral position of the student, during the session that is now about to open, must needs be a subject of painful anxiety to those parents who know well that the time has arrived when it is fitting and necessary that even their favourite son shall face the temptations, and begin to take his share in the great business of the world. What will then be his conduct? Will it reflect honour on them, and be creditable to himself?—or will some evil genius throw its malignant influence around him, and seduce him from the paths of rectitude into those of idleness and dissipation, where he will squander his means, revel in vice and folly, and bring gray hairs with sorrow to the grave? Will he escape, uncontaminated, the snares which notoriously lie in wait for the youthful traveller when he has left his parental hearth, and is wandering through the highways and bye-ways—the broad streets and narrow alleys—of a great and over-peopled city, in which wealth and poverty, luxury and starvation, virtue and vice, seem huddled together in striking and revolting contrast? How will he return to the home of his fathers?

"These are questions of deep and solemn import, which at this moment make the life-blood quiver in many a mother's heart. It behoves us now,

therefore, to view the student's life under its moral aspect. And, first, his place of residence should be judiciously chosen. There cannot be a question that the best policy will be to board in a respectable private family,—if possible, in the house of a physician or surgeon, who will superintend his studies, and whose society will always be instructive, and bear upon the great object he has in contemplation. Lodgings, the best of them, are dreary solitudes, which the brightest fire on a winter's night will hardly cheer up into anything like domestic comfort. 'I am never domesticated', said Robert Southey, 'in lodgings; the hearth is unhallowed; the Penates do not abide there.' The student, with all his home associations fresh about him, feels this, and soon leaves his solitary fire-side to enjoy the gaieties of the theatre, the licentiousness of the tavern, or the society of new acquaintances, with whom he is tempted to smoke cigars, drink punch, and tell merry stories—'pleasant, but wrong'—until the hour arrives when Hamlet's ghost, in the shape of a policeman in blue armour, 'sniffs the morning air,' and meeting him in the deserted street, perhaps 'marshals him the way that he should go.' Habits of irregularity and intemperance are hereby engendered, which are incompatible with study, and which never would occur or be tolerated in a private family. But however important for his personal comfort the place of his abode may be, the choice of his new companions is of infinitely greater consequence to his future happiness, for this is the initiatory step which will govern for good or for evil all his future movements. The purest stream may become contaminated by running through poisoned ores. Vicious habits are more contagious than the leprosy of old, and disfigure the mind, more than that Eastern plague ever did the body. Once infected, there is no escape. Beware, therefore, of new acquaintances. The lustre of a young man's honour soon becomes tarnished in an impure atmosphere. Use caution and discretion in the selection of your friends, and cultivate an intimacy only with those who are of studious and temperate habits, and who can, directly or indirectly, in conversation suggest new ideas, or impart information. For the mind, even in its hours of recreation, should be as active as the swallow on its wing. There are many young men who exhibit no apparent or outward vices, whose society, nevertheless, it would be well to avoid. Such are the following:—We would avoid those who are gay, thoughtless, and prodigal, who lavish their money foolishly away, and whose lodging-house cupboards are miniature wine stores and gin palaces. We would avoid fashionably-dressed youths, who profess to understand and be fond of horses and dogs, and the mysteries of the race-course and the ring, and who leave the hospital for the livery-stable, to associate with grooms, pugilists, horse-breakers, and dog-fanciers. We would avoid those who delight in billiard-playing, whist, écarté, and games of chance, their proficiency in which has been purchased at the expense of their professional education. We would avoid men who habitually haunt the theatre and the tavern, who 'vex the drowsy ear of night' with their uproarious mirth, and go forth to their class-room next morning with faces pale, and cadaverous, and suffused with the fumes of the previous night's debauch. We have, too, a prejudice against any young man whom we may meet with moustache on his lip, and 'imperial' on his chin, elbowing his way along the street with a student's cap upon his head, and a cigar reeking in his mouth. Their cigar is the symbol of the tap-room and the wine-cellar. We would avoid associating with men who are much richer than ourselves, for we could not prudently compete with them in their expenses, and it should always be our pride never to be ashamed of an honourable poverty. We would, also, for our own peace of mind, avoid over-talkative men—everlasting chatterers—the magpies of debating-societies. We know many such, but they have no health in them. What says the immortal Shakespeare? 'Let not the creaking of shoes, or the rustling of silks, betray thy poor heart to woman;

keep thy foot out of brothels, thy hand out of plackets,¹ thy pen from lenders' books, and defy the foul fiend." [Dr. S. BUSHNAN's *Address to Medical Students*. London: October 1850.]

ROYAL MEDICAL SOCIETY OF EDINBURGH. The annual dinner of this important Society, now in the 114th year of its existence, took place in the Archer's Hall, Edinburgh, on February 20. In addition to a large attendance of ordinary members, there were present the Presidents of the Royal Colleges of Physicians and Surgeons, several of the Medical Professors of the University, besides other distinguished members of the Profession in Edinburgh. Among others, were Professors Christison, Syme, Balfour, and Hughes Bennett; Drs. John Conolly of Hanwell, Dr. R. M. Glover of Newcastle, Dr. Adams of Banchory, Mr. J. F. Macfarlan, the Treasurer of the Society, and Mr. A. Gifford, law-agent. Mr. Wolley, as Senior President, occupied the chair; and Dr. Alexander Christison (son of Professor Christison), Mr. Sanderson, and Mr. Murchison, officiated as *croupiers*. After the usual loyal toasts, the Chairman proposed "Prosperity to the Medical Society." He referred to the benefits which the Society, from the earliest period of its history to the present time, had conferred on the medical profession. Many of the great men, who had been educated in the Edinburgh Medical School, had owed more of their advantages to the important training which its debates afforded, than even to their more regular academical studies. Mr. Wolley, in further alluding to the project just now before the Society, of removing to a more commodious and more advantageously placed hall than the one which it at present occupied, expressed his confidence that the past and present usefulness of the Society would prove the guarantee of its future prosperity; and that although it had often, and with some truth, been called an ancient Society, yet, so far as its prospects were concerned, it had only just completed the period of its youth, and was now entering on its maturity. Mr. Sanderson next proposed, "The University of Edinburgh and the Professors." Dr. Christison, in replying, expressed the pleasure which he felt in conveying to the Society the assurance of lasting interest which the Professors felt in its welfare, and their willingness to cooperate in its objects. "The prosperity of the Royal College of Physicians, and the health of Dr. Simpson," were next proposed by Dr. Alexander Christison. Dr. Simpson replied, expressing his sense of the great benefits which he himself personally had received from the Society in the early part of his career. He concluded by proposing the health of the "Senior President." Professor Christison next proposed the health of Dr. Conolly; after which, Dr. Conolly having responded, various other toasts were given, and the Society separated at a late hour, much gratified with the whole proceedings of the evening.

EPIDEMIOLOGY *v.* PATHOLOGY. Epidemiology is in the ascendant! At the commencement of this session, the Pathological Society offered to pay rent to the Royal Medical and Chirurgical Society for permission to meet in their rooms in Berners-street; but the Council declined the proposal. This, it now appears, arose from no feeling of dignity on the part of the executive, as subsequently they granted the gratuitous use of their apartments to a semi-scientific association—the Epidemiological Society. We are not able to explain the conduct of the Council; but it *requires explanation*, more particularly if it be true, as the *Medical Times* alleges, that an "upholsterer and chair-maker" has been proposed as a member of the new Society which has been so hospitably housed by the rulers of the Royal Medical and Chirurgical.

THE FOTHERGILLIAN GOLD MEDAL of the Medical Society of London, for the best essay on Phthisis, has been awarded to DR. RICHARD PAYNE COTTON, Assistant-Physician to the Hospital for Consumption, Brompton.

¹ "Plackets," an old word signifying *petticoats*.

APPOINTMENTS.

JAMES, W. W., Esq., elected Surgeon to the Exeter Dispensary, in the room of W. P. KINGDON, Esq., resigned.

PARSEY, Dr. W. H., late Assistant Medical Officer of the Devon County Lunatic Asylum, to be Medical Superintendent to the Warwick County Asylum.

SMITH, Andrew, M.D., Deputy Inspector-General of Hospitals, elected Inspector-General of Hospitals, and Superintendent to the Army Medical Department, in the room of Sir JAMES McGRIGOR, resigned.

ST. MARY'S HOSPITAL, PADDINGTON. The following gentlemen have been selected:—PHYSICIANS—Drs. Alderson, Chambers, and Sibson. SURGEONS—Messrs. Coulson, Lane, and Ure. PHYSICIAN-ACCOCHEUR—Dr. Tyler Smith. SURGEON-ACCOCHEUR—Mr. I. B. Brown. OPHTHALMIC SURGEON—Mr. White Cooper. AURAL SURGEON, Mr. Toynbee.

OBITUARY.

AUDUBON, M. J. J., the distinguished naturalist, at his residence near New York, aged 76, on 27th January.

FLETCHER, Dr. Ralph, late Consulting Surgeon to the Gloucester General Hospital, at his residence in Gloucester, aged 70, on 8th February.

LANGENBECK, M., Professor of Surgery at Göttingen, aged 75, lately.

MACKNES, Dr. James, at Hastings, aged 46, on 8th February.

NAEGELE, Dr., Professor of Midwifery at Heidelberg, aged 72, lately.

THORPE, R., Esq., Consulting Surgeon to the Royal Infirmary at Manchester, aged 64, on 21st January.

TO CORRESPONDENTS.

To the Editor of the London Journal of Medicine.

24th February, 1851.

SIR,—In a "Paper on Continued Fever", by Dr. Humphry Sandwith, published in the LONDON JOURNAL OF MEDICINE for the present month, is the following passage: "On the other hand, Dr. William Jenner himself admits, that occasionally, though very rarely, in typhoid fever with the rose rash, the follicular lesion is wanting". So far as I am aware, during four years' daily attendance at the London Fever Hospital, I saw not a single exception to the rule, that rose spots are diagnostic of typhoid fever, that is to say, of an affection having for its anatomical character disease of Peyer's patches, and that the mulberry rash is diagnostic of typhus fever; I mean just as far diagnostic of those diseases as are the eruptions of measles, and of scarlet fever diagnostic of those two diseases. I may add, that the experience of 1850 fully bore out the law I attempted to establish in vol. xxxiii of the *Medico-Chirurgical Transactions*, that the poison of typhoid fever, of typhus, and of relapsing fever, respectively produce only disease identical in essential characters with that from which the poison generating the new disease itself sprung. By inserting this in your ably conducted Journal, you will oblige,

Yours obediently,

W. JENNER.

8, Albany-street, Regent's Park.

ST. THOMAS'S HOSPITAL. From the length of the account of this hospital, we have been obliged to postpone it to next month.

OUR COTEMPORARIES, when they quote original articles from our pages, ought to name the Journal to which they are indebted. DR. R. QUAIN's paper on the Stethometer (wood-cuts included) was transferred to the *Lancet* and *Medical Gazette*, but there was no reference to the LONDON JOURNAL OF MEDICINE. By another species of inadvertence, our youthful brother the *Institute* reprints one of Dr. C. J. B. Williams's papers on the Physical Examination of the Abdomen, stating that it is from the *Dublin Journal of Medicine*!

FOREIGN EDITORS and AUTHORS are requested to deposit copies of their works with M. Victor Masson of Paris, or with any of the booksellers in Germany in correspondence with Messrs. Williams and Norgate, of Henrietta Street, Covent Garden, London. In all cases they ought to be addressed, distinctly, "To the Editors of the London Journal of Medicine, Richards' Printing Office, 37, Great Queen Street, Lincoln's Inn Fields, London."